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REPORT

ON THE

SCIENTIFIC RESULTS

OF THE

VOYAGE OF H.M.S. CHALLENGER

DURING THE YEARS 1873-76

UNDER THE COMMAND OF

CAPTAIN GEORGE S. NARES, R.N., F.R.S.

AND

CAPTAIN FRANK TOURLE THOMSON, R.N.

142575.

PREPARED UNDER THE SUPERINTENDENCE OF

THE LATE

Sir C. WYVILLE THOMSON, Knt., F.R.S., &c.

REGIUS PROFESSOR OF NATURAL HISTORY IN THE UNIVERSITY OF EDINBURGH

DIRECTOR OF THE CIVILIAN SCIENTIFIC STAFF ON BOARD

AND NOW OF

JOHN MURRAY, F.R.S.E.

ONE OF THE NATURALISTS OF THE EXPEDITION

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ZOOLOGY—VOL. IX.

PLATES.

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PLATE I.

PLATE I.

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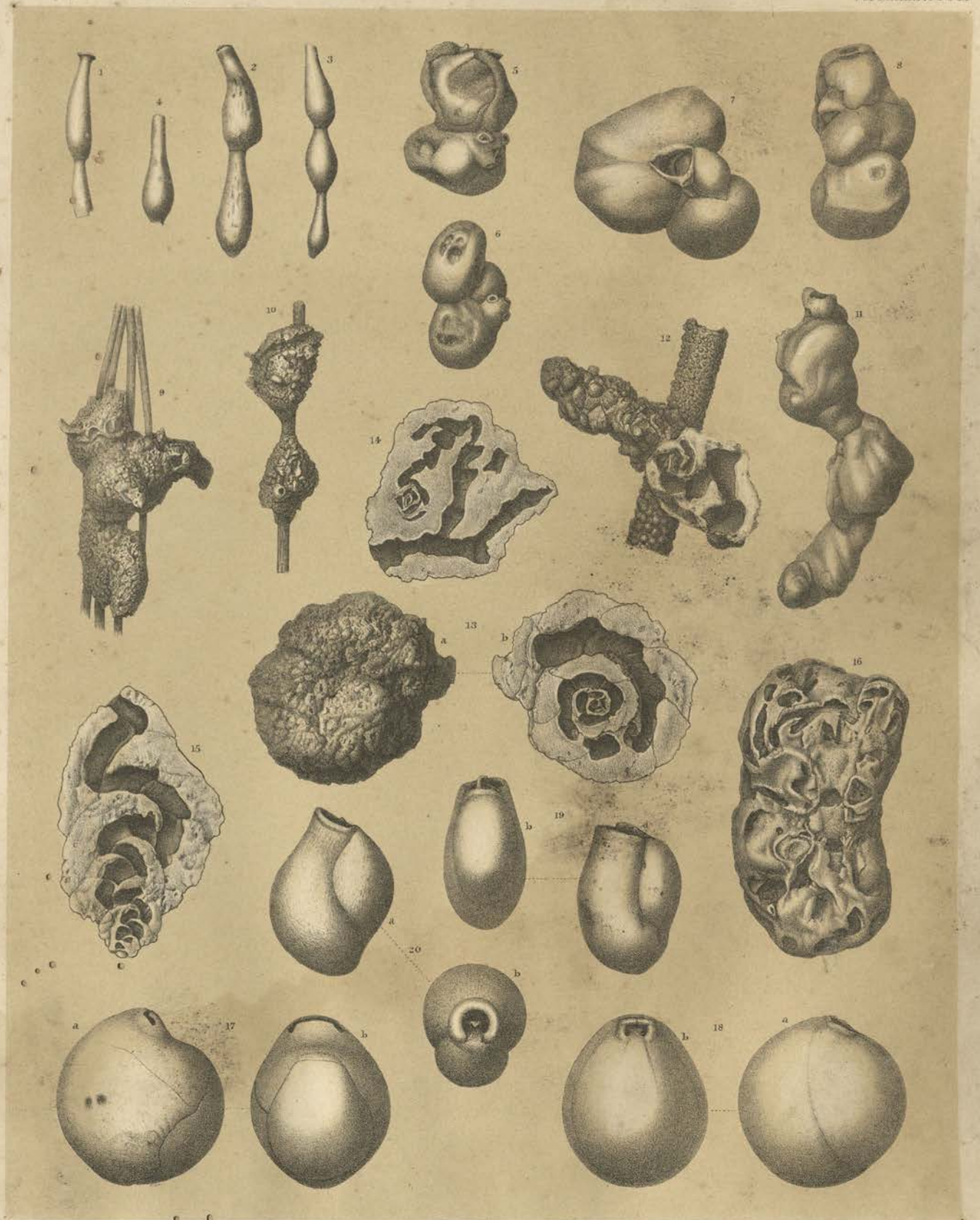

A.T. Hollick ad nat. del. et lith. Hanhart imp.

NUBECULARIA_MILIOLA, (Biloculina).

PLATE II.

PLATE II.

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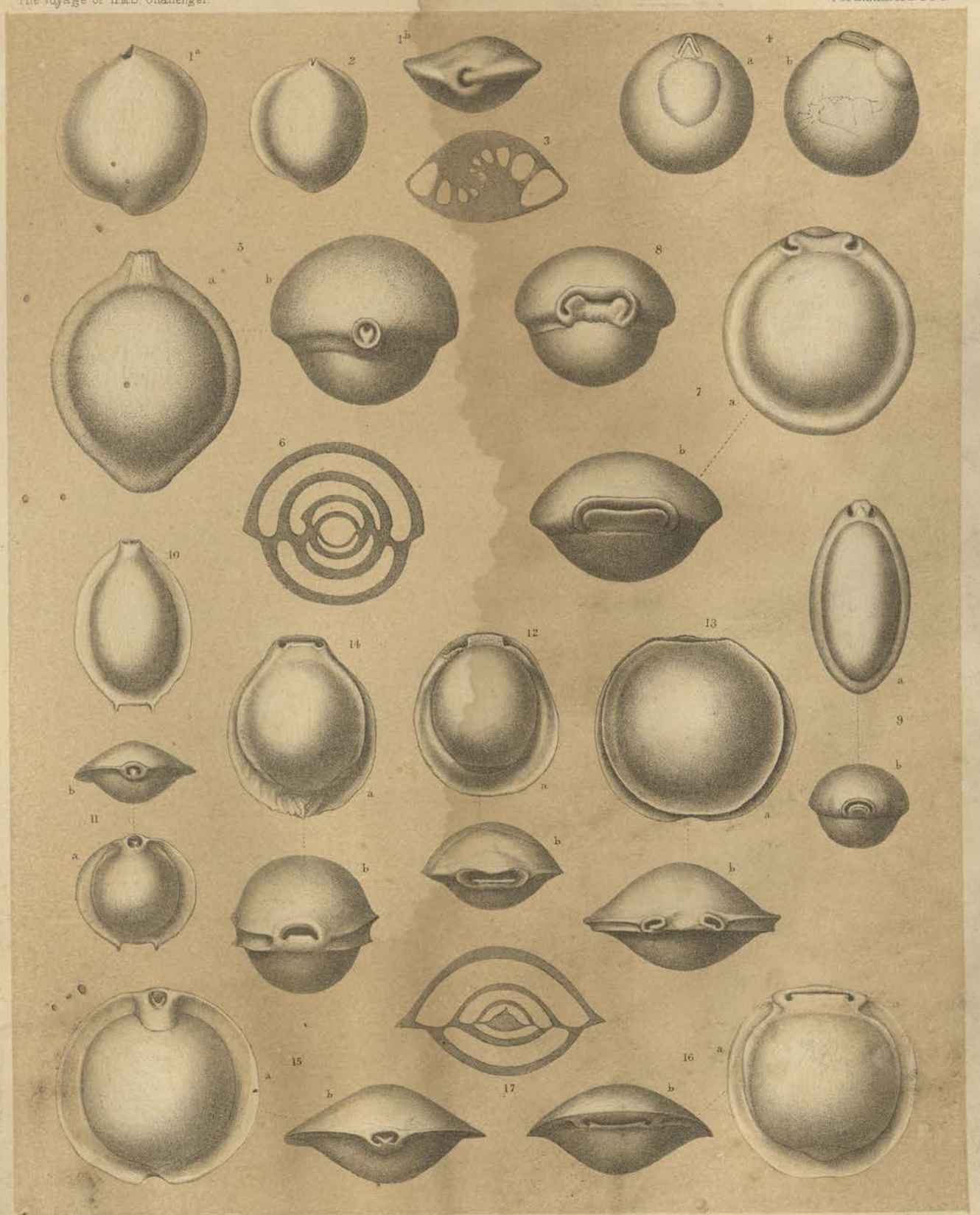

A.T.Holbeck ad nat. del. et lith. Hanhart imp.

MILIOLA. (Biloculina.)

PLATE III.

PLATE III.

BILOCULINA.—MILIOLINA.

			Diam.	Page
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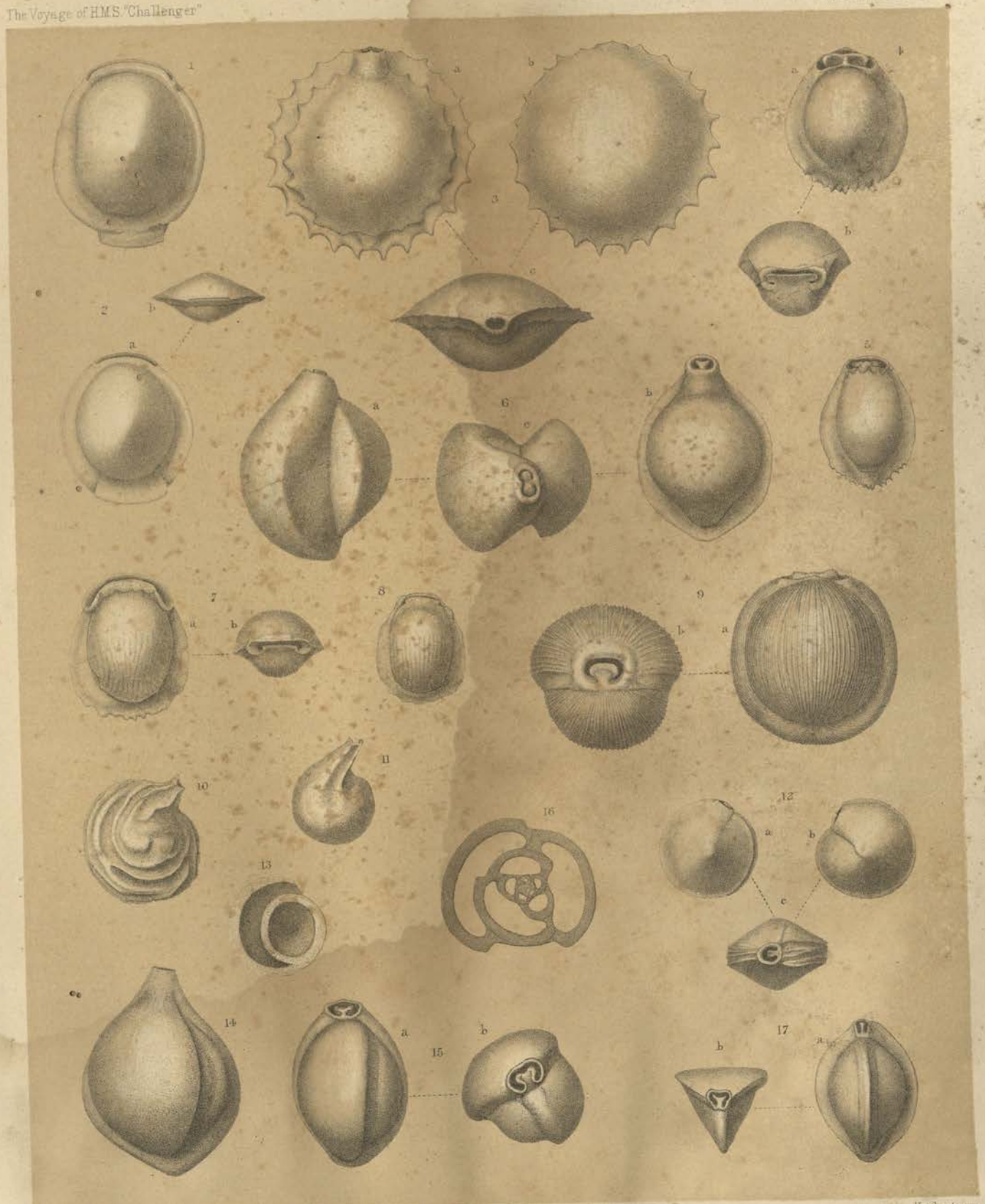
	a, Lateral aspect; *b*, oral aspect.			



A.T.Hollick ad nat. del. et lith.

Hanhart imp.

MILIOLA (Biloculina and Miliolina.)

PLATE IV.

PLATE IV

Miliolina.

		Diam.	Page
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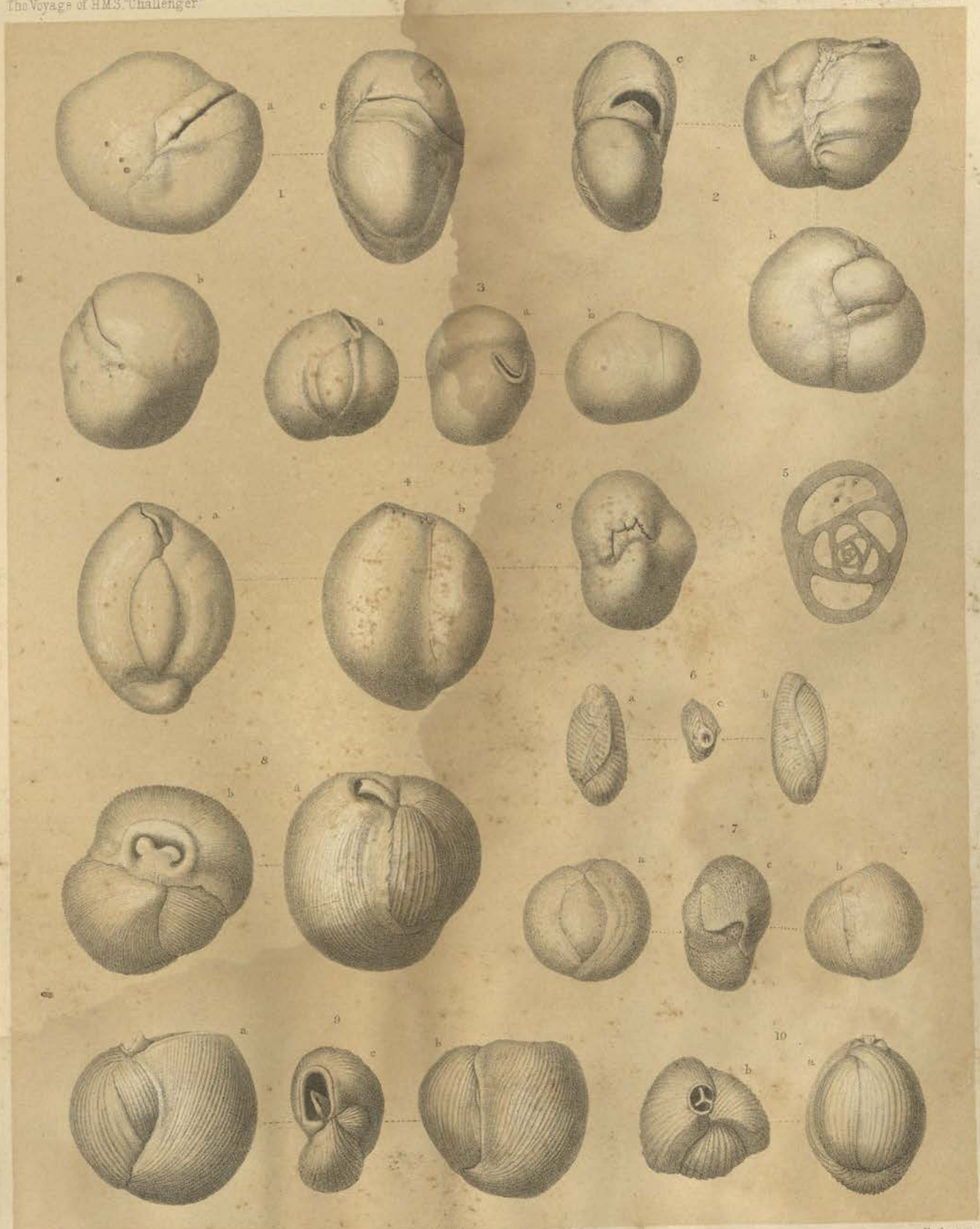
,, 9.—*Miliolina fichteliana*, d'Orbigny, sp.,	×	35	169
a, *b*, Lateral aspects; *c*, oral aspect.			



A.T. Hollick ad nat. del. et lith.

Hanhart imp.

MILIOLA. (Miliolina.)

PLATE V.

PLATE V.

Miliolina.

		Diam.	Page
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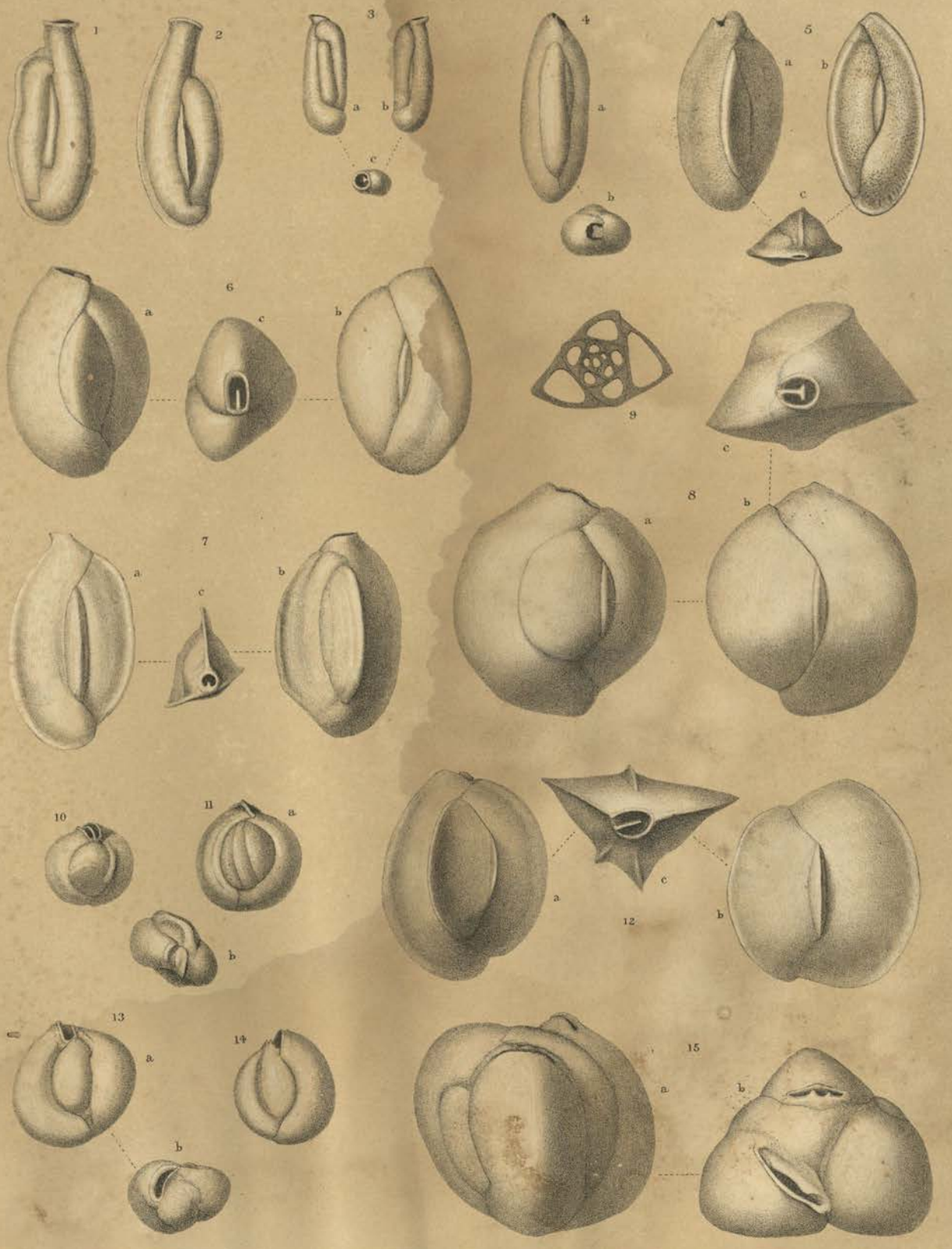

A.T.Hollick ad nat. del. et lth. Hanhart imp.

MILIOLA, (Miliolina).

PLATE VI.

PLATE VI.

Miliolina.

		Diam.	Page
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Figs. 18–19. Oral aspect.			
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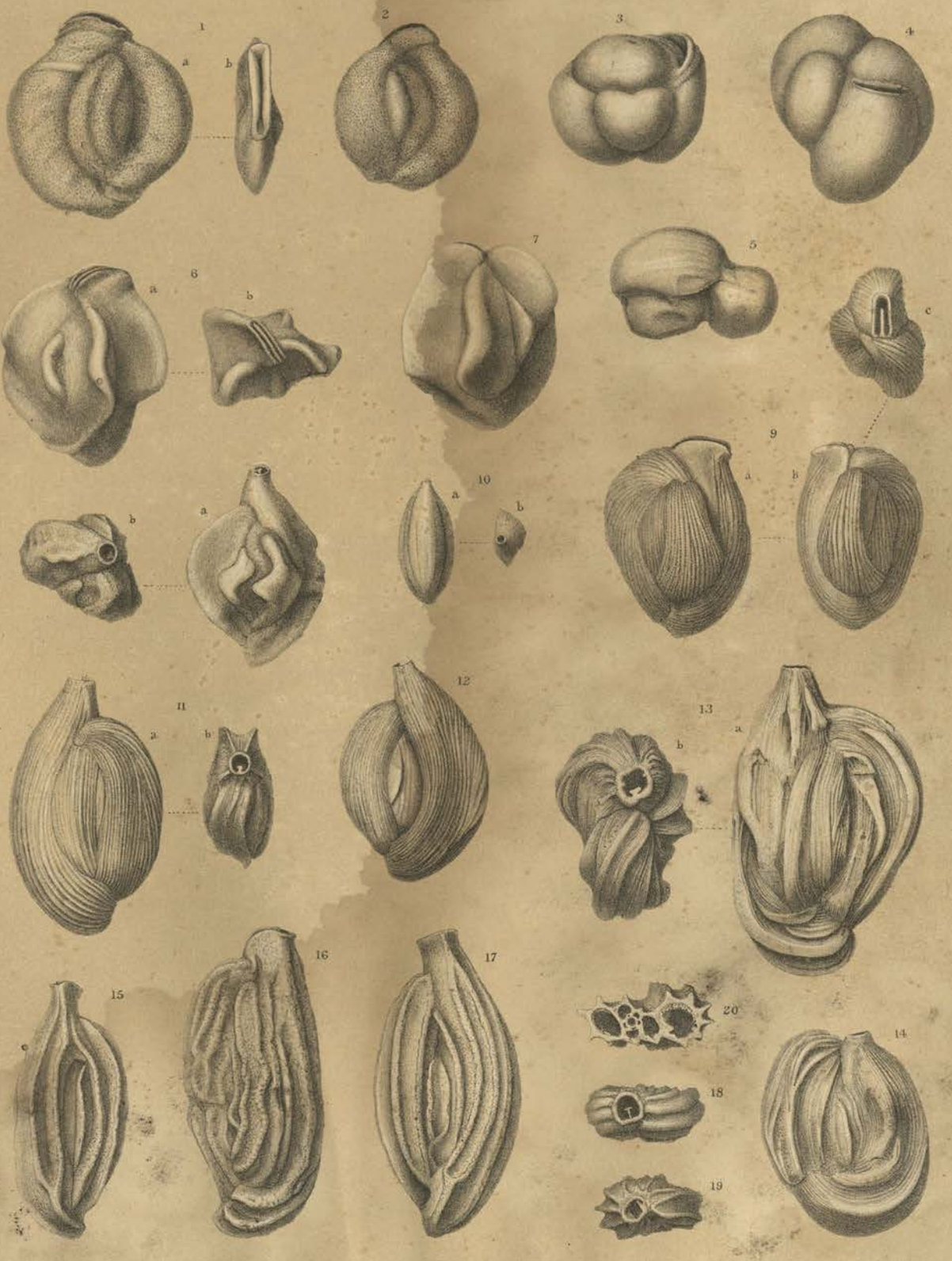

A.T. Hollick ad nat. del. et lith. Hanhart imp.

MILIOLA, (Miltolina).

PLATE VII.

PLATE VII.

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T.A.Hollick del. et lith. Hanhart imp.

MILIOLA (Miliolina).

PLATE VIII.

PLATE VIII.

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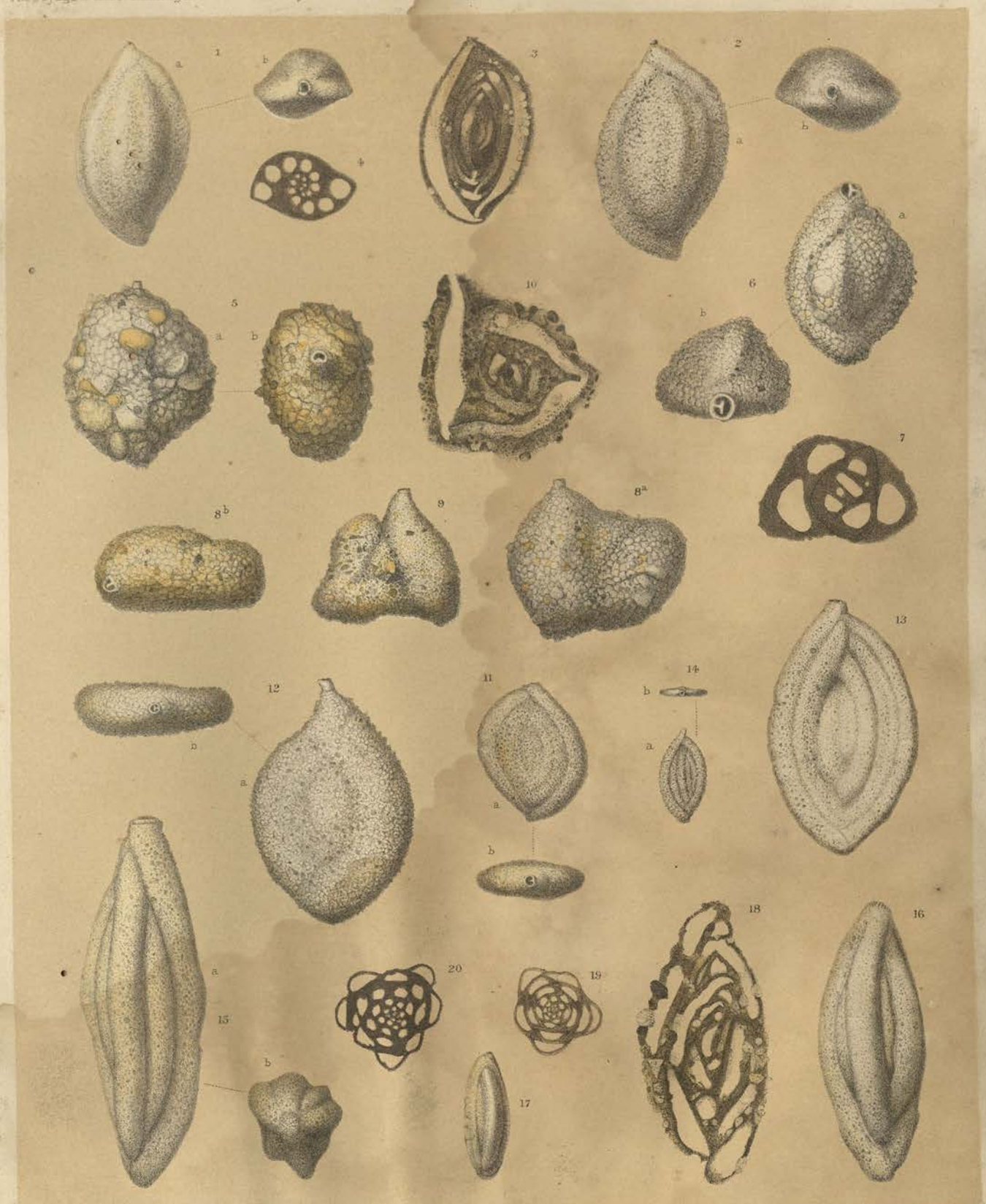

A.T.Hallrick ad nat. del. et lith.

Barnhart imp.

MILIOLA (Miliolina_Spiroloculina).

PLATE IX.

PLATE IX.

MILIOLINA.—SPIROLOCULINA.

		Diam.	Page
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,, 15–17.—*Spiroloculina limbata*, d'Orbigny,			150
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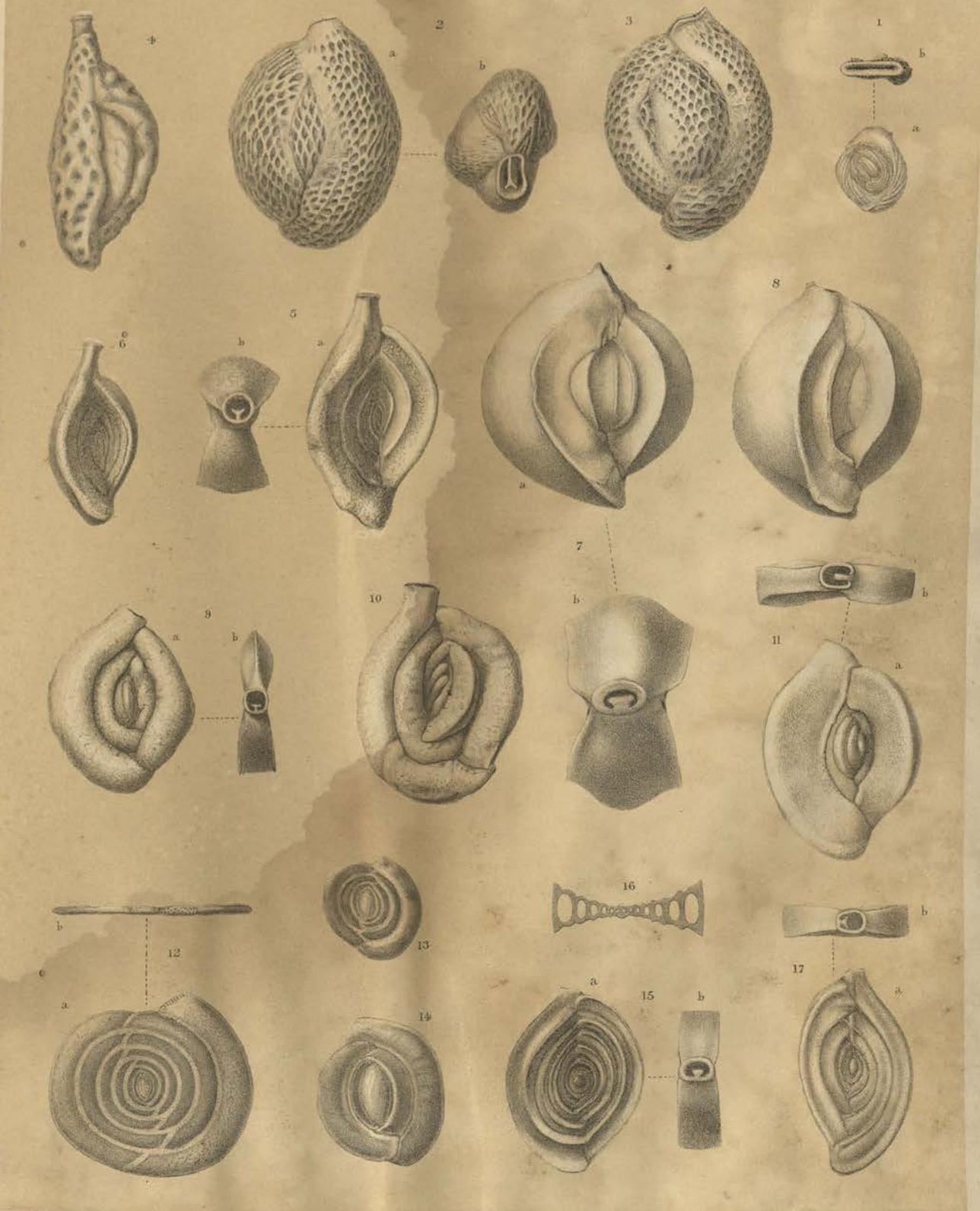
Fig. 16. Transverse section of the shell,	×	30	



T. Hollick del. et lith.

Hanhart imp.

MILIOLA (Miliolina & Spiroloculina.).

PLATE V

PLATE X.

PIROLOCULINA.

		Diam.	Page
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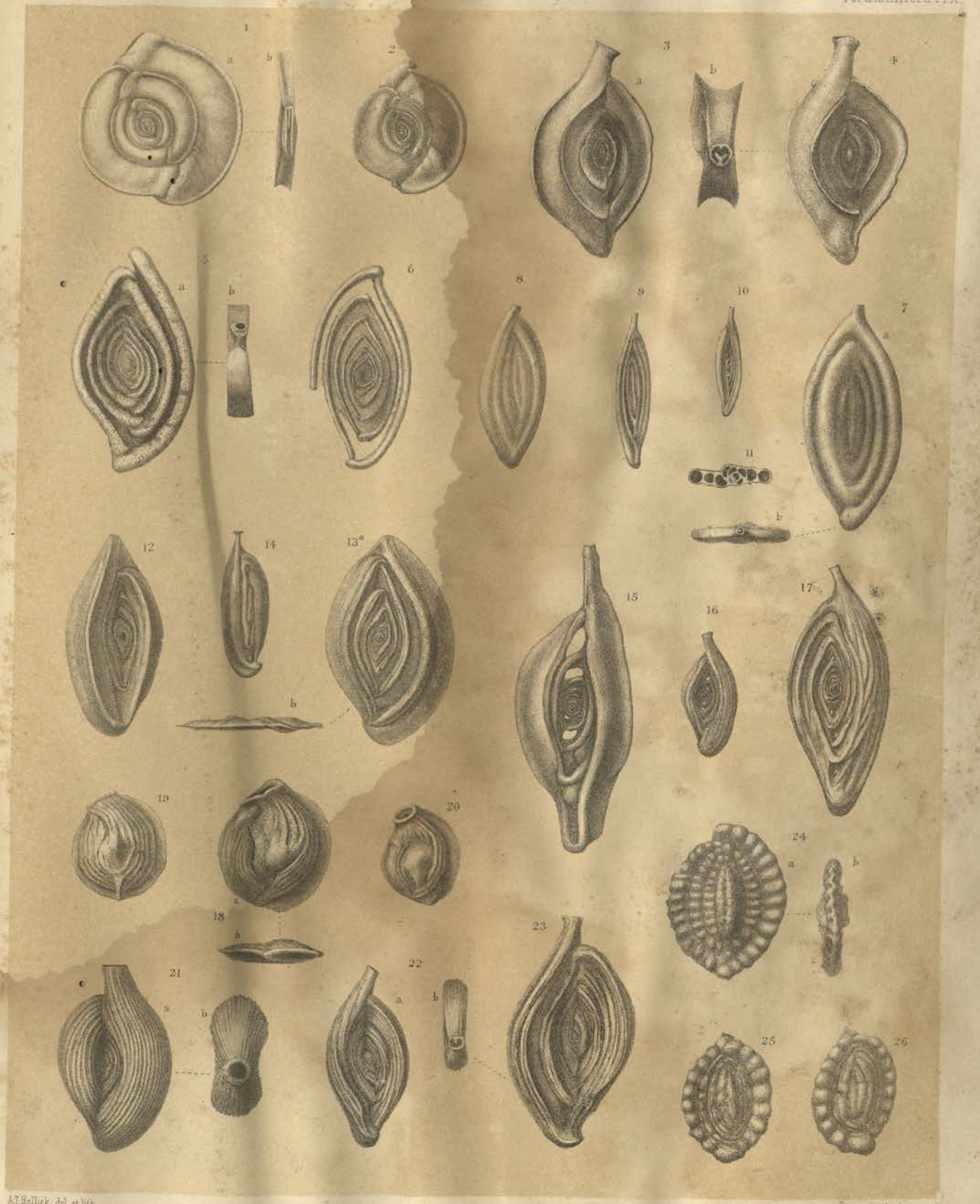

A.T.Hollick del. et lith.

Hanhart imp

MILIOLA (Spiroloculina.).

PLATE XI.

PLATE XI.

CORNUSPIRA.—PLANISPIRINA.—HAUERINA.

		Diam.	Page
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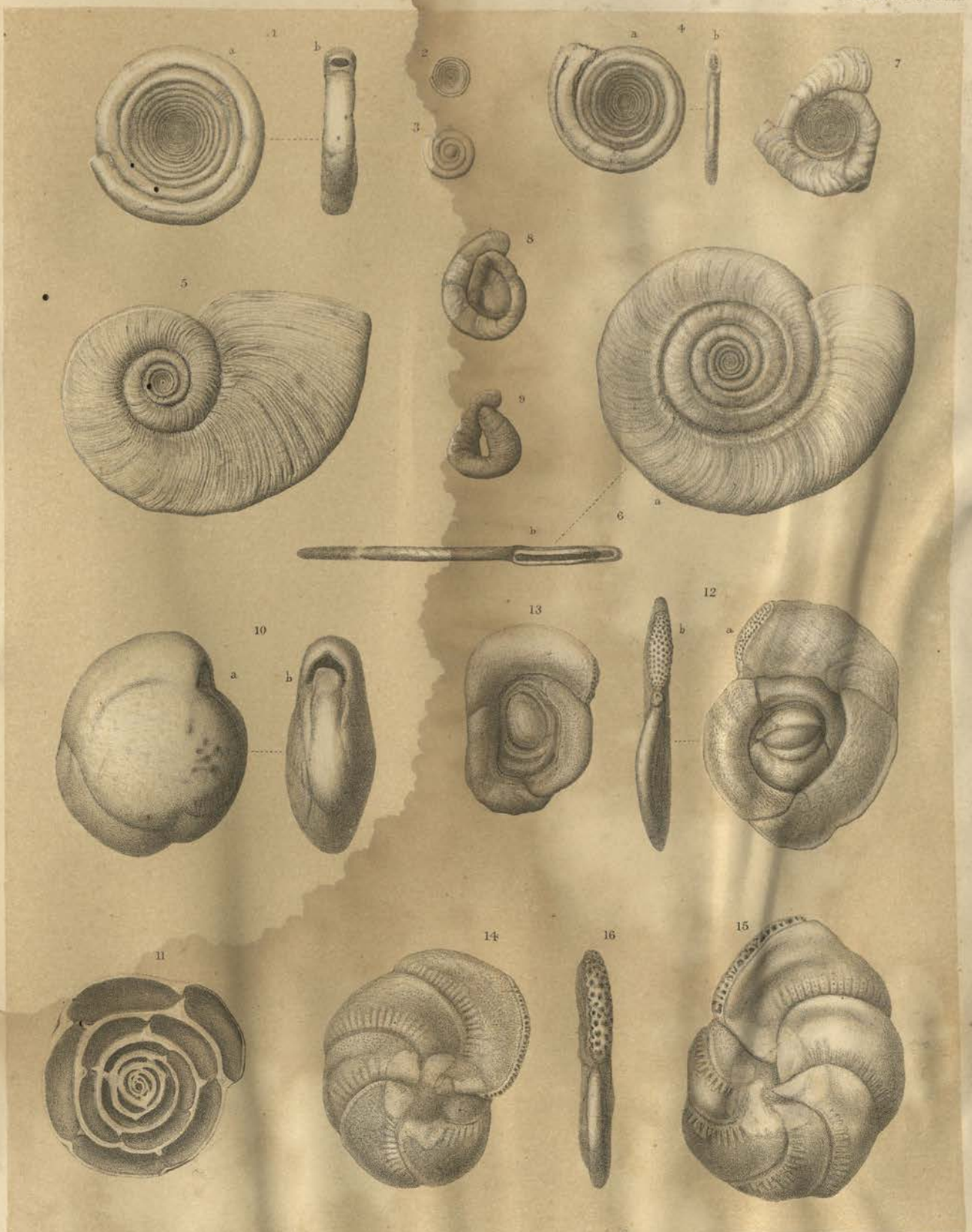

A.T. Hollick del. et lith.

CORNUSPIRA_HAUERINA.

Hanhart imp.

PLATE XII.

PLATE XII.

PLANISPIRINA.—OPHTHALMIDIUM.—VERTEBRALINA.—ARTICULINA.

	Diam.	Page
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„ 22–24.—*Articulina sagra*, d'Orbigny, . . .	× 50	184
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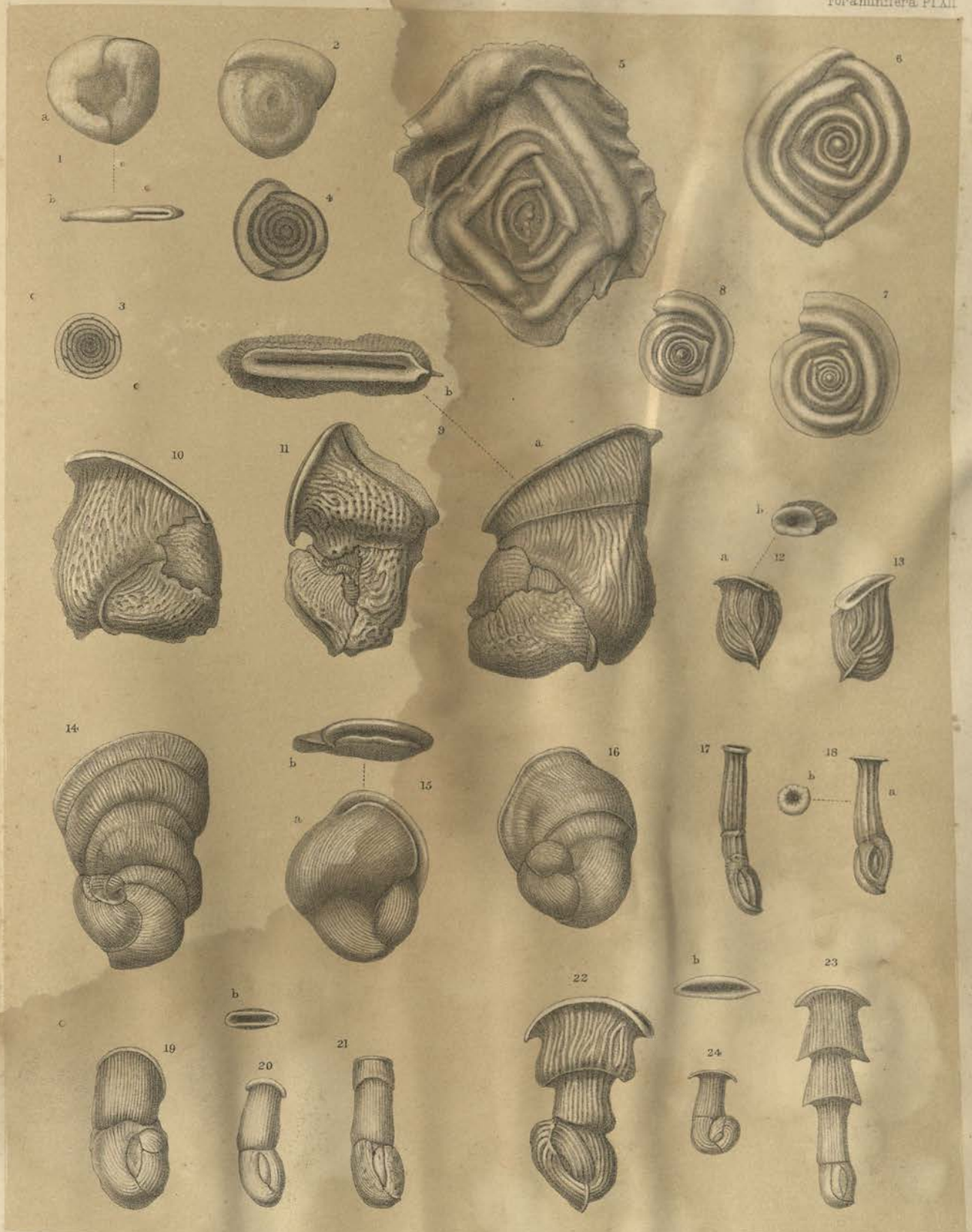

A.T. Hollick ad nat. del. et lith.

Hanhart imp.

HAUERINA_VERTEBRALINA_ARTICULINA.

PLATE XIII.

PLATE XIII.

ARTICULINA.—PENEROPLIS.

	Diam.	Page
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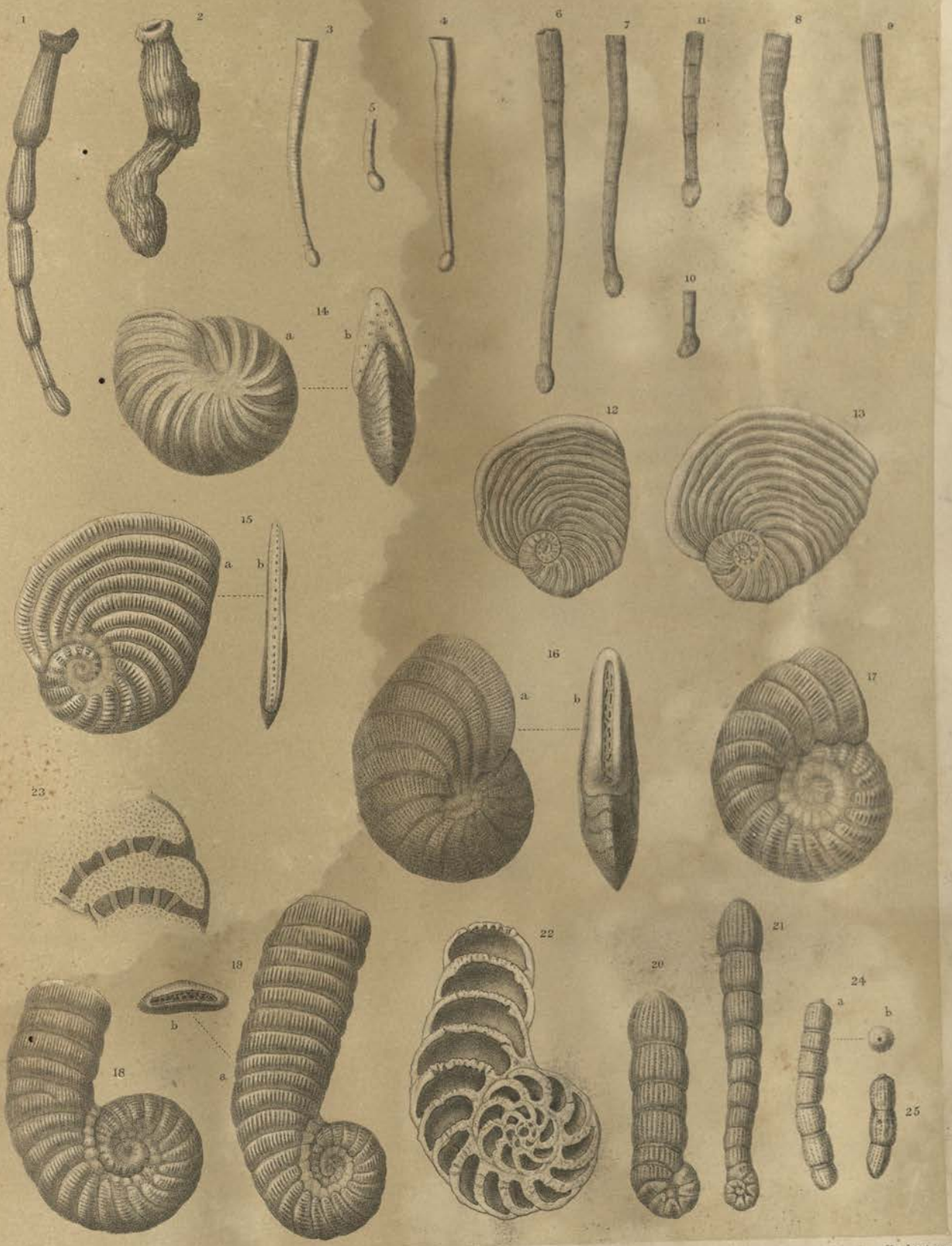
„ 2.—Misshapen specimen, probably of the same species,	× 50	
„ 3–5.—*Articulina funalis*, var. *inornata*, nov., . .	× 30	186
„ 6–11.—*Articulina funalis*, n. sp., ...	× 30	185
Fig. 11. Specimen viewed by transmitted light, showing the septation.		
„ 12–25.—*Peneroplis pertusus*, Forskål, sp., ...		204
Fig. 15. Var. *a*,—*Peneroplis planatus*, Fichtel and Moll, sp., *a*, Lateral aspect; *b*, front peripheral aspect.	× 50	
Figs. 16, 17, 23. Var. *b*,—*Peneroplis pertusus*, Forskål, sp.		
Figs. 16 *a*, 17. Lateral aspect: 16 *b*, front peripheral aspect,	× 40	
Fig. 23. Section of a portion of the shell, by transmitted light, showing the punctation of the wall, and the stoloniferous passages, . . .	× 200	
Figs. 18, 19, 22. Var. *c*,—*Peneroplis arietinus*, Batsch, sp., .	× 40	
Figs. 18, 19 *a*, Lateral aspect; 19 *b*, oral end.		
Fig. 22. Longitudinal section of the shell.		
Figs. 20, 21. Var. *d*,—*Peneroplis cylindraceus*, Lamarck, sp., Lateral aspect.	× 60	
Figs. 24, 25. Var. *e*,—*Peneroplis lituus*, Gmelin, sp. (?), . Incomplete specimens.	× 75	
Fig. 14. Var. *f*,—*Peneroplis carinatus*, d'Orbigny, . *a*, Lateral aspect; *b*, front peripheral aspect.	× 50	
Figs. 12, 13. Var. *g*,—*Peneroplis lævigatus*, Karrer, . Lateral aspect.	× 50	



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Hanhart imp.

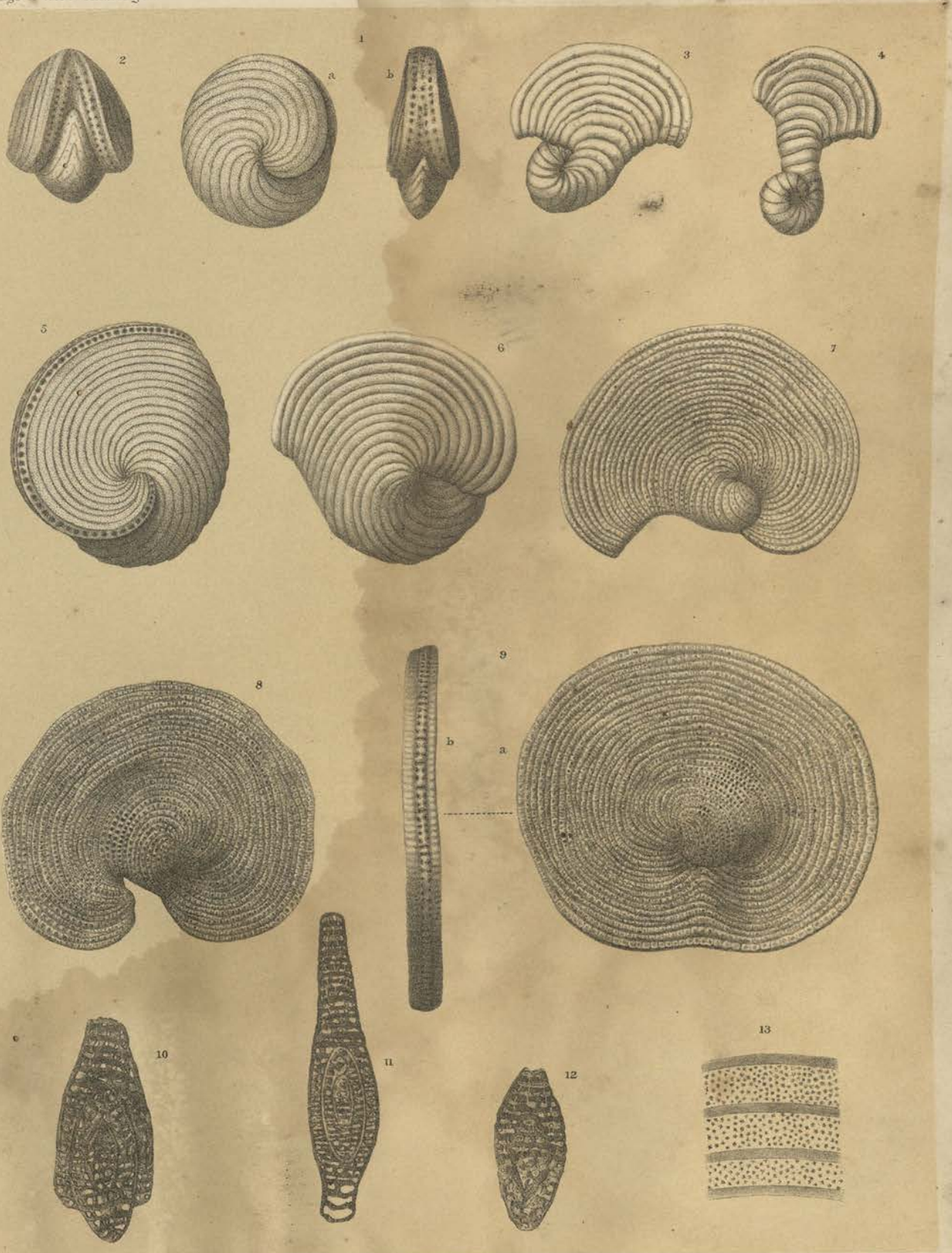
ARTICULINA — PENEROPLIS.

PLATE XIV.

PLATE XIV

Orbiculina.

		Diam.	Page
Figures 1–13.—*Orbiculina adunca*, Fichtel and Moll, sp.,			209
Figs. 1, 2. Very young or nautiloid condition;—*Nautilus angulatus*, Fichtel and Moll,	×	30	
Figs. 3, 4. Varieties analogous to the "Spiroline" modifications of *Peneroplis*,	×	30	
Figs. 5, 6. Specimens in the young or intermediate stage;—*Nautilus orbiculus*, Fichtel and Moll,	×	30	
Figs. 7, 8. Flabelliform adult shells;—*Nautilus aduncus*, Fichtel and Moll,	×	20	
Fig. 9. Adult specimens, discoidal form;—*Orbiculina compressa*, d'Orbigny,	×	20	
(*b*, *b*, *b*, peripheral aspect of the various forms.)			
Figs. 10, 11, 12. Transverse sections of shells in different stages of growth, showing the embracing character of the earlier chambers,	×	20–30	
Fig. 13. Section of the shell more highly magnified, showing the superficial punctation,	×	100	



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ORBICULINA.

PLATE XV.

PLATE XV.

Orbitolites.

		Diam.	Page
Figures 1–5.—*Orbitolites marginalis*, Lamarck, sp., . .	×	30	214

Illustrating the various stages of growth.

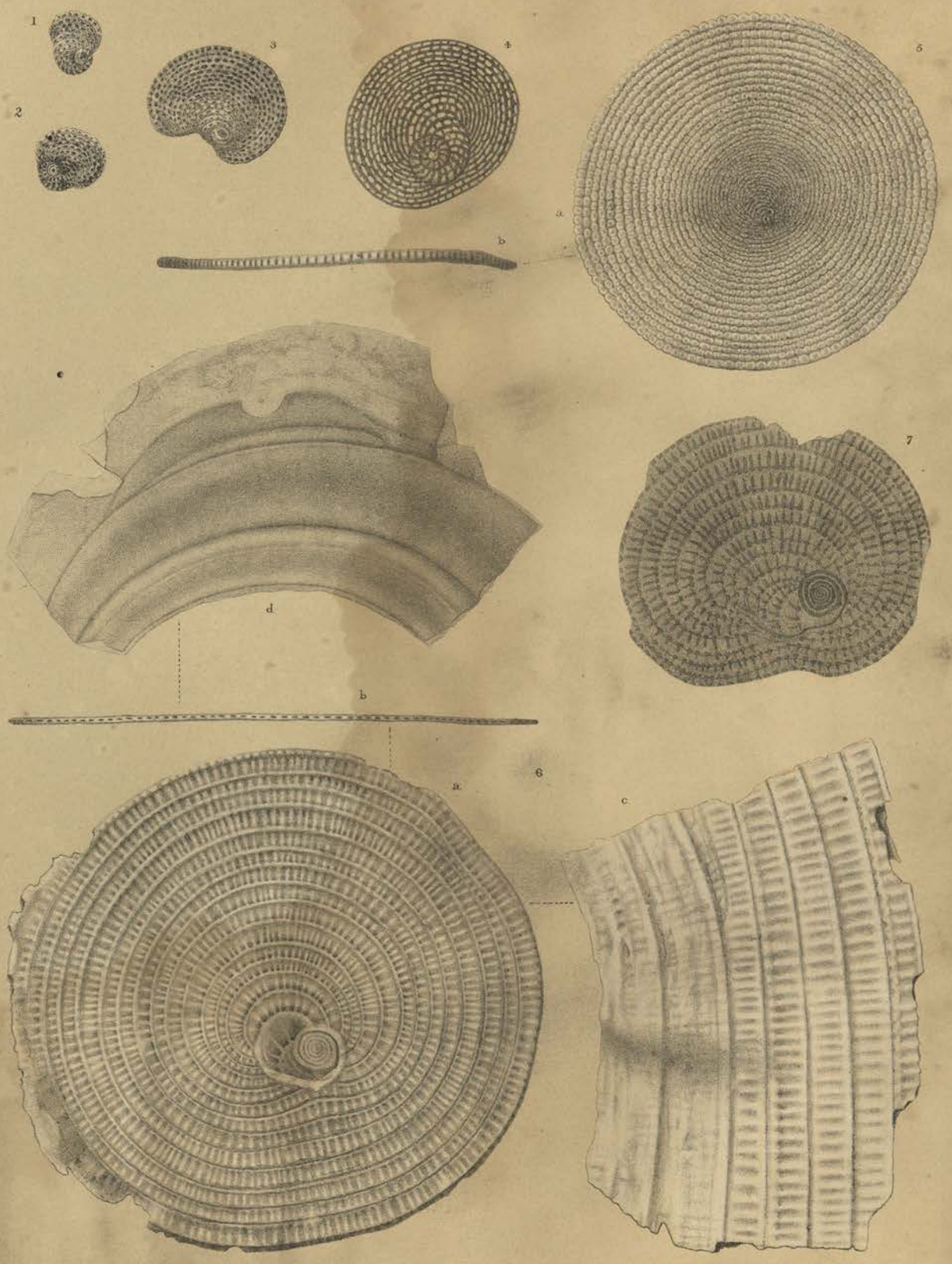
Figs. 1–4. Young specimens; fig. 4, viewed by transmitted light.

Fig. 5. Adult shell; *a*, lateral aspect; *b*, peripheral aspect.

,, 6, 7.—*Orbitolites tenuissima*, Carpenter, . . .	×	20	212

Fig. 6. *a*, Central portion of a disk, lateral aspect; *b*, peripheral aspect of the same, showing the marginal pores; *c*, portion further removed from the centre, with less distinct septation; *d*, another portion, the annuli of irregular width and not subdivided into chamberlets.

Fig. 7. Central portion of another specimen, viewed by transmitted light.



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ORBITOLITES.

Hanhart imp.

PLATE

PLATE XVI.

ORBITOLITES.

	Diam.	Page
Figures 1–6.—*Orbitolites complanata*, Lamarck, sp.,		218
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,, 7.—*Orbitolites duplex*, Carpenter,	× 11	216
Specimen with waved or slightly sinuate margin.		
,, 8–11.—*Orbitolites complanata*, var. *laciniata*, Brady,		220
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Fig. 10. *a*, Lateral aspect; *b*, peripheral aspect,	× 3	
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Hanhart imp.

ORBITOLITES.

PLATE XVII.

PLATE XVII.

ORBITOLITES.—ALVEOLINA.

		Diam.	Page
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Monstrous specimens, showing the results of redundant and inequilateral growth.			
,, 7–12.—*Alveolina boscii*, Defrance, sp.,			222
Figs. 7–9. Lateral aspect; fig. 10, terminal aspect,	×	15	
Fig. 11. Longitudinal section of the shell,	×	25	
Fig. 12. Transverse section of the shell,	×	25	
,, 13–15.—*Alveolina melo*, Fichtel and Moll, sp.,	×	50	223
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Fig. 15. Transverse section of the shell.			

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ORBITOLITES_ALVEOLINA.

PLATE XVIII

PLATE XVIII.

PSAMMOSPHÆRA.—SOROSPHÆRA.—SACCAMMINA.

		Diam.	Page
Figures 1–8.—*Psammosphæra fusca*, Schulze,			249
	Fig. 1. Large specimen,	× 20	
	Figs. 2, 3. Smaller examples,	× 40	
	Fig. 4. Specimen built round a sponge-spicule,	× 40	
	Fig. 5. Sessile specimen,	× 40	
	Fig. 6. Test cut so as to show the interior,	× 40	
	Fig. 7. Section of the wall, showing the fitting together of the sand-grains,	× 40	
	Fig. 8. Specimens adherent to each other,	× 40	
„ 9, 10.—*Sorosphæra confusa*, Brady,		× 15	251
„ 11–17.—*Saccammina sphærica*, M. Sars,		× 15	253
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	Fig. 14. Sessile specimen.		
	Fig. 15. Test laid open to show the interior.		
	Fig. 16. Polythalamous adherent specimen.		
	Fig. 17. Fusiform specimen with two apertures, resembling a segment of the Carboniferous *Saccammina carteri*.		
„ 18, 19.—*Saccammina socialis*, n. sp.,		× 20	255

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PSAMMOSPHÆRA-SOROSPHÆRA-SACCAMMINA.

PLATE XIX.

PLATE XIX.

Astrorhiza.

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„ 5–10.—*Astrorhiza arenaria*, Norman,		232
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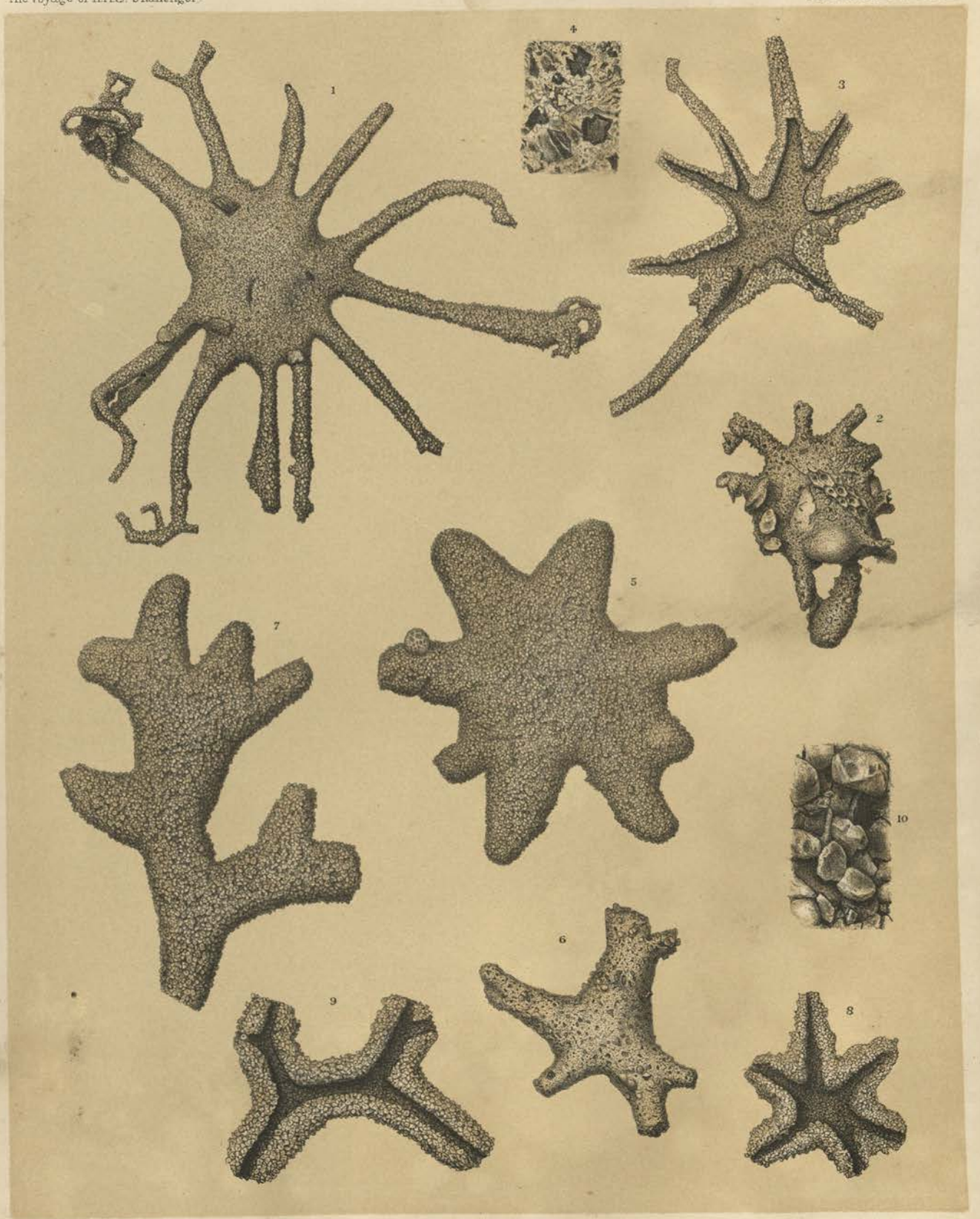
Figs. 8, 9. Specimens laid open to show the interior,	× 8	
Fig. 10. Portion of the surface more highly magnified, to show the constituent sand-grains,	× 100	



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ASTRORHIZA.

Hanhart imp.

PLATE XX.

PLATE XX.

ASTRORHIZA.

		Diam.	Page
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	Figs. 6–8. Specimens laid open, showing the sub-segmented interior,	× 8	
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,, 10–13.—*Astrorhiza angulosa*, Brady,		× 8	234
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,, 14–23.—*Astrorhiza granulosa*, Brady,			234
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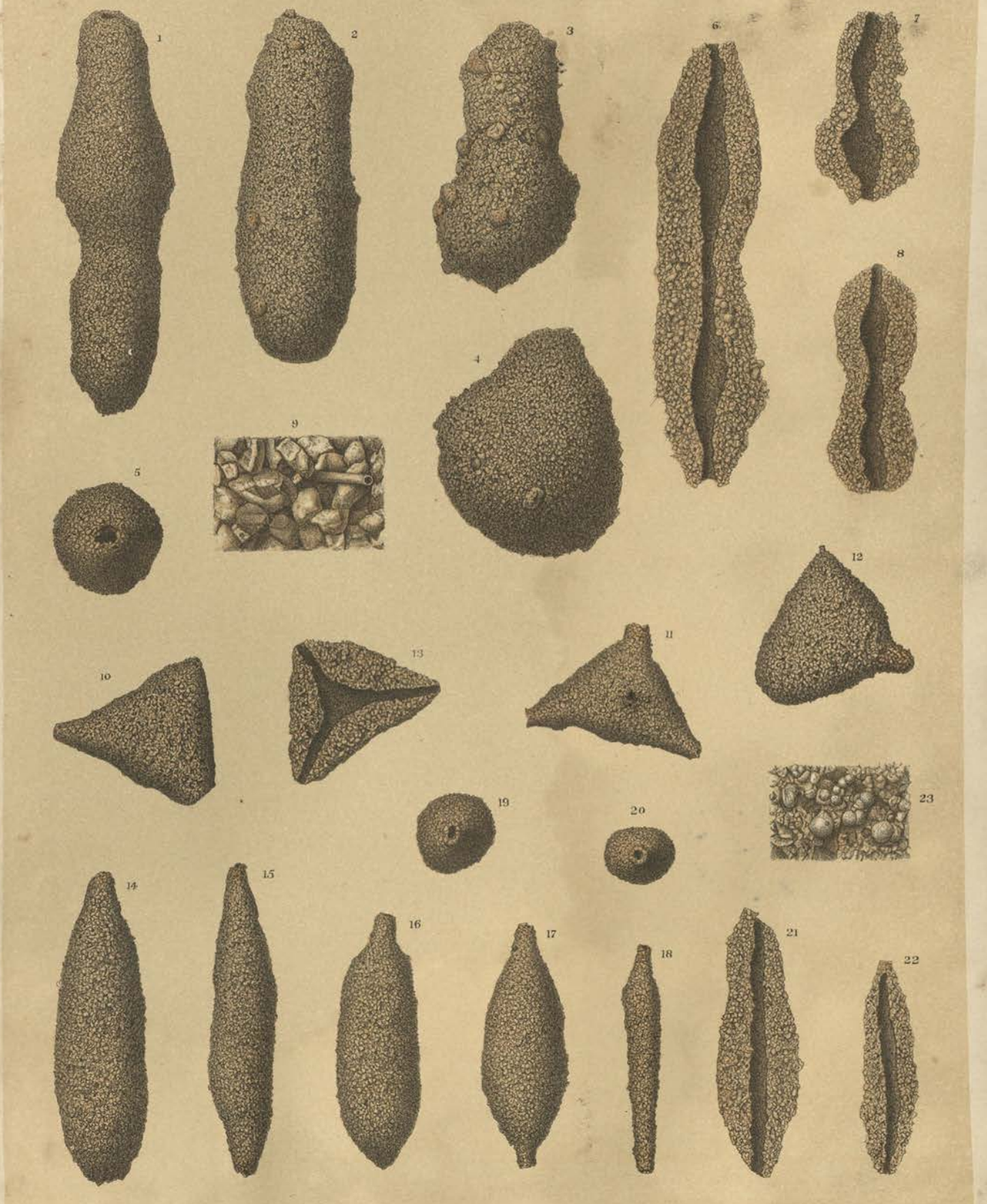
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PLATE XXI.

PLATE XXI.

Rhabdammina.

		Diam.	Page
Figures 1–13.—*Rhabdammina abyssorum*, M. Sars,			266
Figs. 1–8. Specimens of various forms,	×	10	
Fig. 9. Fragment of a variety with branched arms (*Rhabdammina irregularis*, Carpenter?),	×	10	
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Figs. 12, 13. Surface more highly magnified, to show the constituent sand-grains; fig. 12, specimen from the equatorial Pacific; fig. 13, from the North Atlantic,	×	60	

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RHABDAMMINA.

PLATE XXII.

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RHABDAMMINA—JACULELLA.

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,, 7–10.—*Rhabdammina discreta*, Brady, ...		268
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,, 11–13.—*Rhabdammina cornuta*, Brady, ...		270
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,, 14–18.—*Jaculella acuta*, Brady, ...	× 12	255
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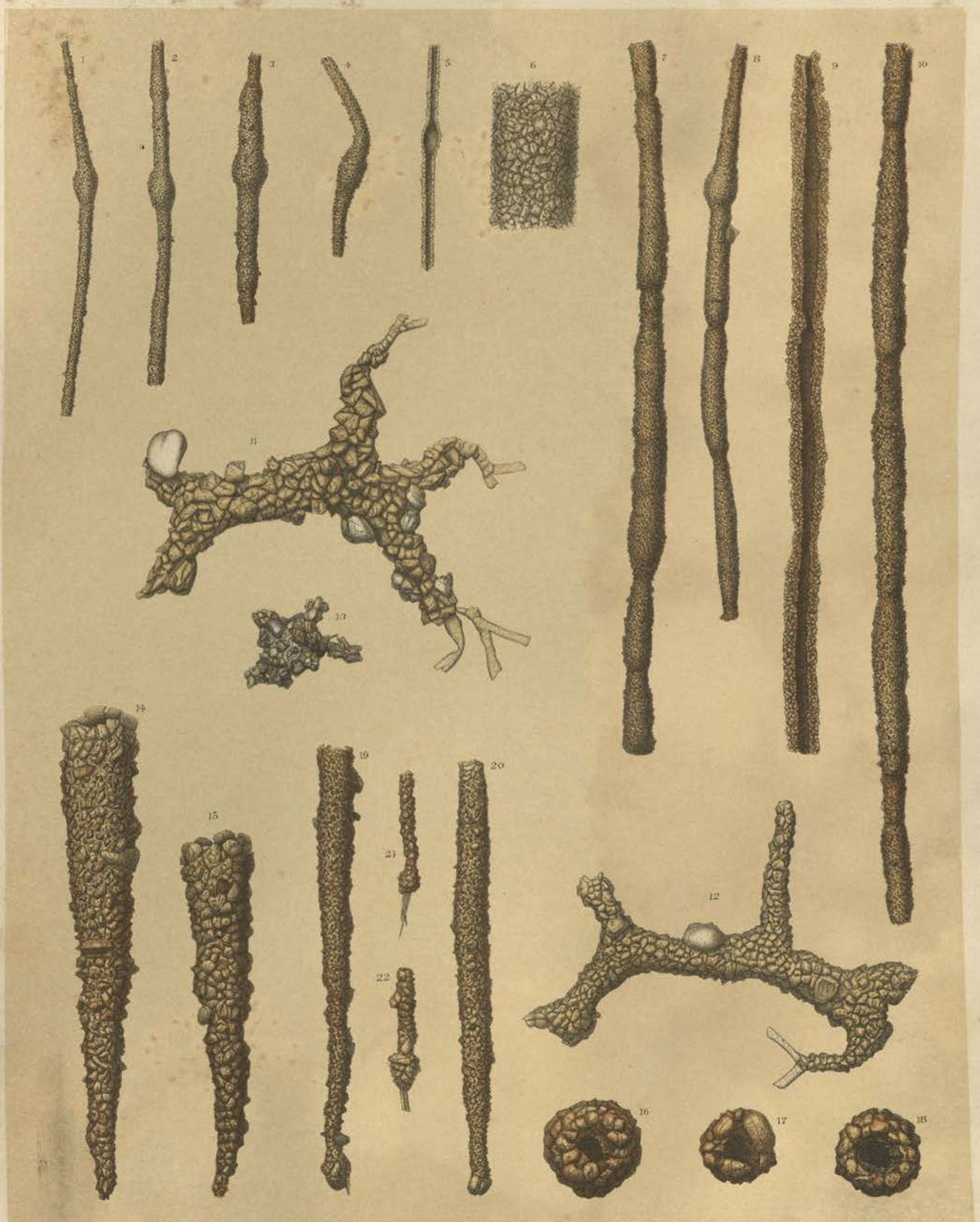
19–22.—*Jaculella obtusa*, Brady, ...	× 12	256
Figs. 19, 20. Adult specimens.		
Figs. 21, 22. Young or broken tests; the bulbous extremities armed with sponge spicules.		



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RHABDAMMINA JACULELLA.

PLATE XXIII.

PLATE XXIII.

Hyperammina.

		Diam.	Page
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	Figs. 1, 2. Large specimens with the oral end imperfect; fig. 3, smaller specimen complete,	× 10	
	Fig. 5. Portion of the aboral end laid open, showing the primordial chamber and the thickness and texture of the walls,	× 20	
	Fig. 6. A similar specimen,	× 10	
,, 4, 7–10.—*Hyperammina elongata*, Brady,		× 10	257
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,, 11–14.—*Hyperammina subnodosa*, n. sp.,		× 10	259
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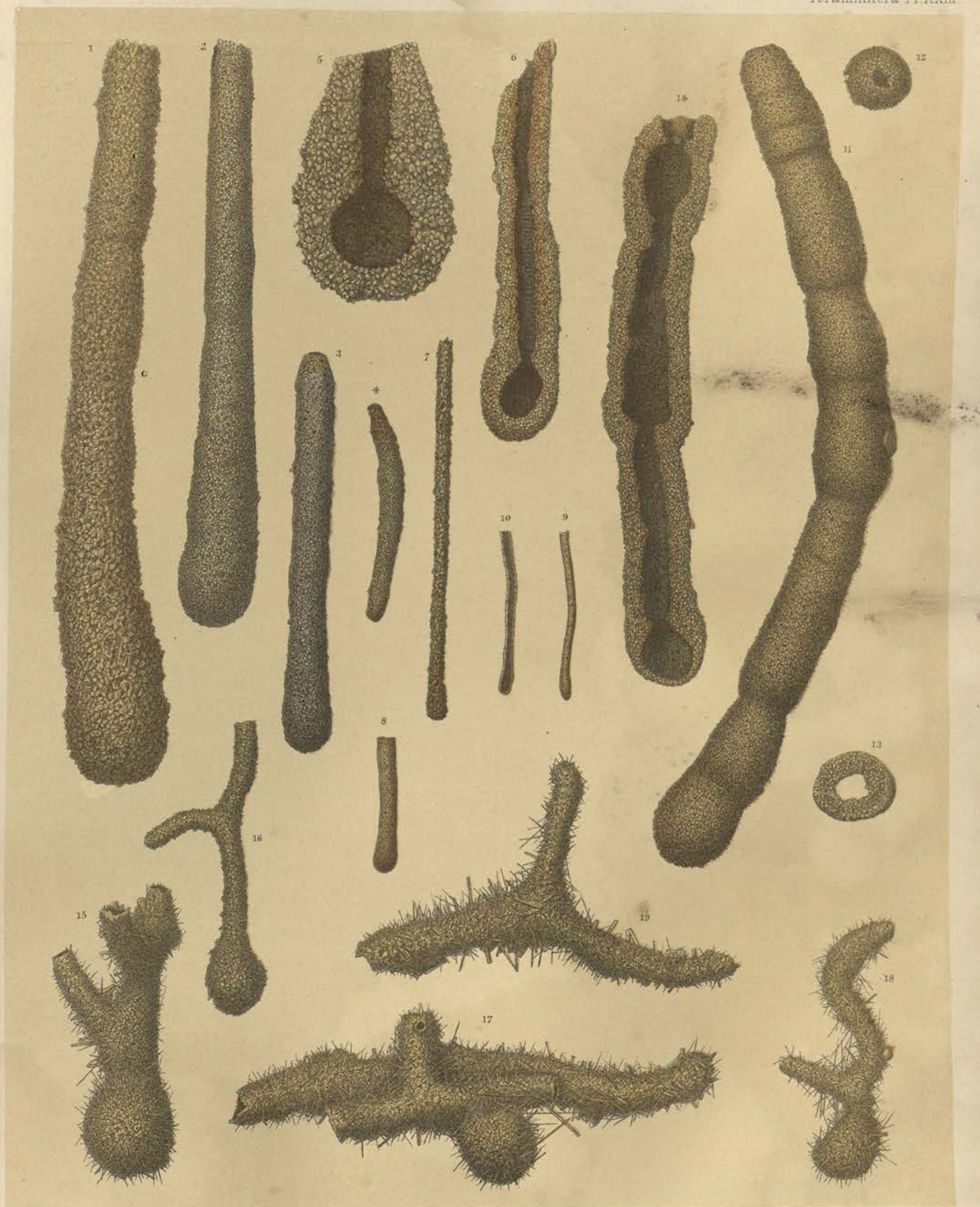
	Fig. 13. Transverse section of the test.		
	Fig. 14. Test laid open longitudinally.		
,, 15–19.—*Hyperammina ramosa*, Brady,		× 16	261



A.T.Hollick ad nat del et lith

HYPERAMMINA.

Hanhart imp

PLATE XXIV.

PLATE XXIV.

HYPERAMMINA.—MARSIPELLA.

		Diam.	Page
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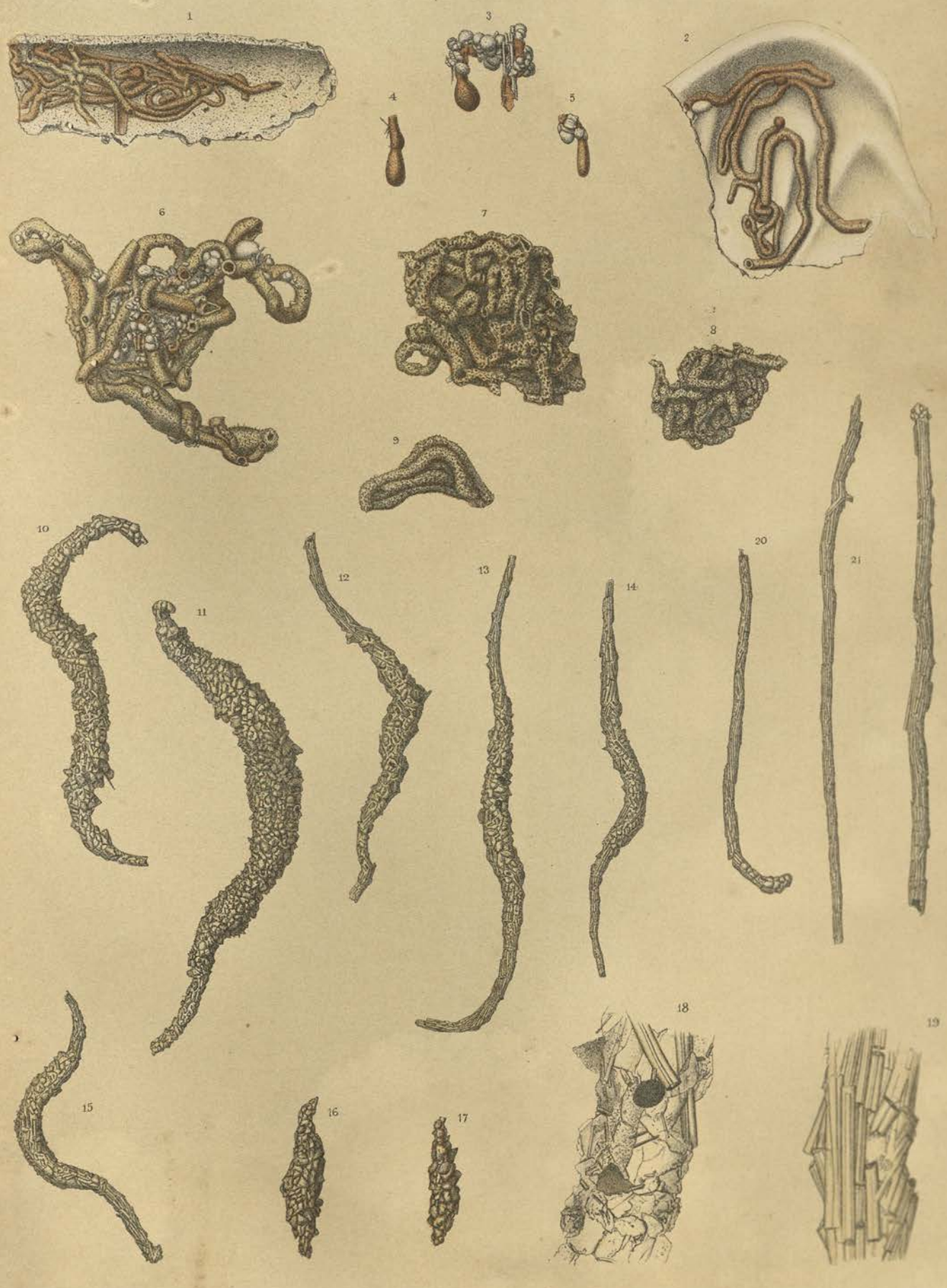
Figs. 1, 2. Specimens adherent to fragments of shell.			
Figs. 3–5. Primordial chambers of specimens found in Globigerina ooze.			
Figs. 6–9. Masses formed of the tubes irregularly crowded together.			
,, 10–19.—*Marsipella elongata*, Norman, ...			264
Figs. 10–17. Specimens illustrating the range of form, and the variable proportion of sand and sponge-spicules employed in building the test, .	×	15	
Figs. 18, 19. Portions of the surface more highly magnified, ...	×	60	
,, 20–22.—*Marsipella cylindrica*, Brady, . . .	×	15	265



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HYPERAMMINA _ MARSIPELLA

Forbert imp

PLATE XXV.

PLATE XXV.

PILULINA.—TECHNITELLA.—STORTHOSPHÆRA.—PELOSINA.

		Diam.	Page
Figures 1–6.—*Pilulina jeffreysii*, Carpenter,			244
	Fig. 1. *a*, Lateral aspect; figs. 1 *b*, 2, oral aspect,	× 12	
	Fig. 3. Test laid open to show the thickness of the walls, and the smoothly finished internal cavity,	× 12	
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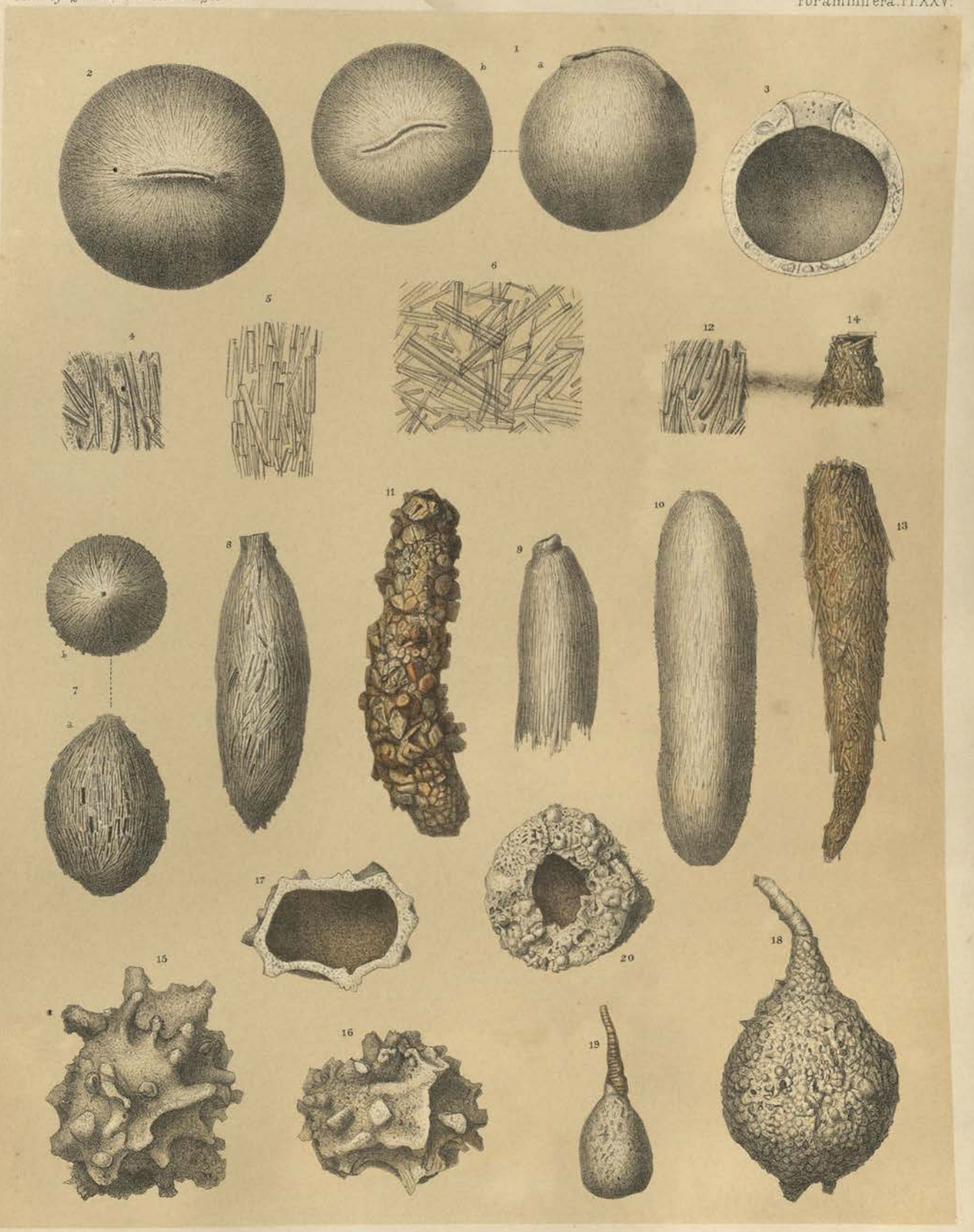
,, 7.—*Technitella melo*, Norman,		× 50	246
	a, Lateral aspect; *b*, oral aspect.		
,, 8–12.—*Technitella legumen*, Norman,			246
	Fig. 8. Lateral aspect, small specimen,	× 50	
	Fig 9. Broken specimen, with collar-like aperture,	× 40	
	Fig. 10. Lateral aspect,	× 30	
	Fig. 11. Specimen with an incrustation of sand protecting the spicular test,	× 25	
	Fig. 12. Surface of the spicular test more highly magnified,	× 100	
,, 13, 14.—*Technitella raphanus*, n. sp.,		× 25	247
	Fig. 13. Large specimen somewhat imperfect at the oral end.		
	Fig. 14. Oral end of a smaller test.		
,, 15–17.—*Storthosphæra albida*, Schulze,		× 20	241
	Figs. 15, 16. General aspect of the test.		
	Fig. 17. Specimen laid open to show the thickness of the wall, and the internal cavity.		
,, 18–20.—*Pelosina rotundata*, Brady,		× 20	236
	Figs. 18, 19. General aspect of the test.		
	Fig. 20. Specimen laid open transversely to show the thickness of the wall, and the comparatively small internal cavity.		



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Hanhart imp.

PILULINA–TECHNITELLA–STORTHOSPHÆRA–PELOSINA.

PLATE XXVI.

PLATE XXVI.

PELOSINA.—HIPPOCREPINA.—BATHYSIPHON.

	Diam.	Page
Figures 1–6.—*Pelosina cylindrica*, n. sp., . . .	× 9	236
Figs. 1–3. Lateral aspect; fig. 4, oral end; fig. 5, aboral end.		
Fig. 6. Specimen laid open to show the thickness of the walls and the smooth interior.		
,, 7–9.—*Pelosina variabilis*, Brady, ...	× 9	235
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Fig. 9. Portion of a test laid open to show the thickness of the walls.		
,, 10–14.—*Hippocrepina indivisa*, Parker, . . .	× 45	325
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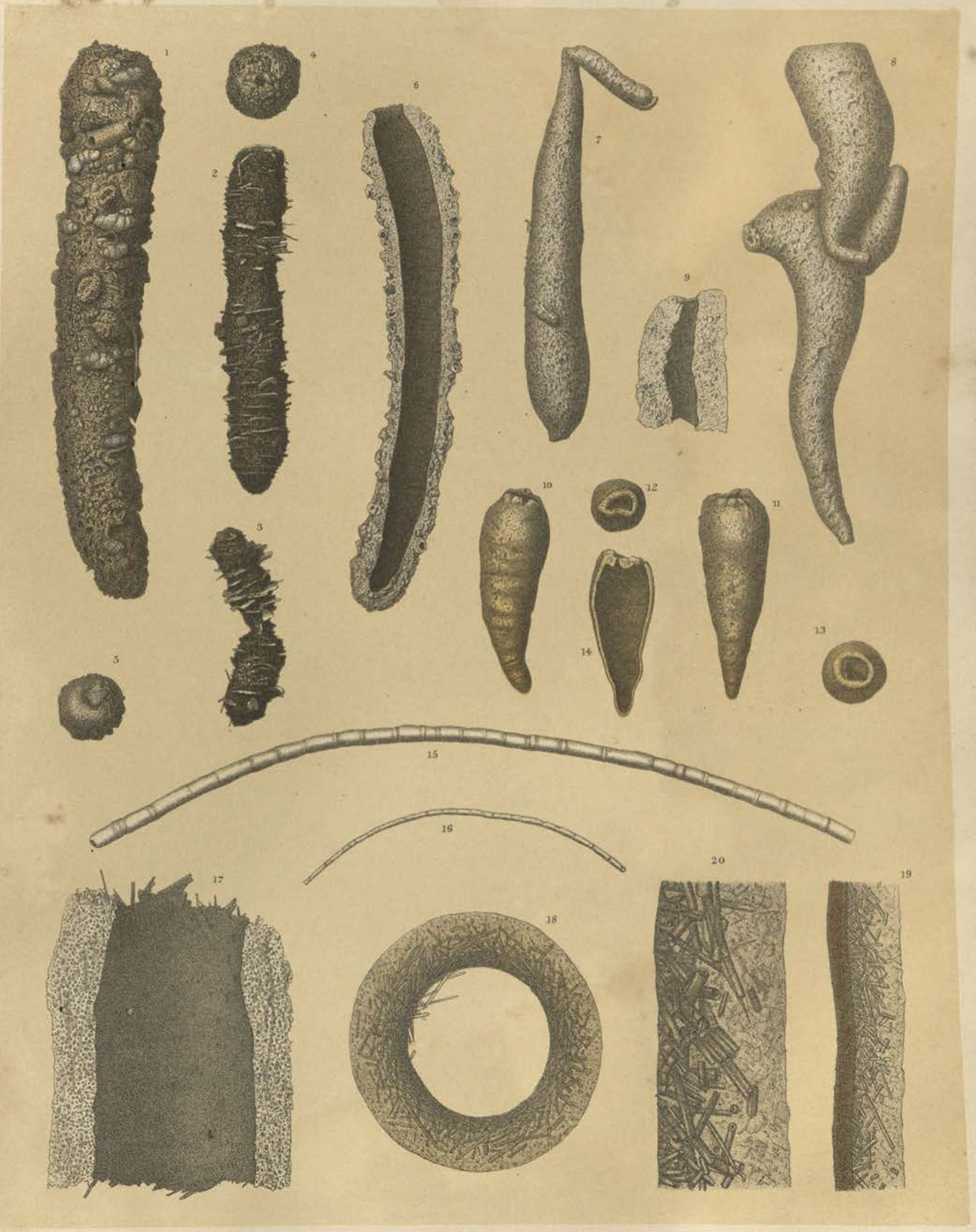
Fig. 19. Longitudinal section of the wall, with a mass of adherent dark-coloured sarcode, . .	× 60	
Fig. 20. Longitudinal section, more highly magnified, .	× 200	



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PELOSINA_HIPPOCREPINA_BATHYSIPHON.

Hanhart imp.

PLATE XXVII.

PLATE XXVII.

Aschemonella.

		Diam.	Page
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Figs. 1–10. Various specimens, more or less broken,	×	15	
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,, 12–15.—*Aschemonella ramuliformis*, n. sp.,	×	15	273
Fig. 14. Transparent section of a portion of a specimen.			
Fig. 15. Test laid open to show the interior.			

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PLATE XXVII A.

PLATE XXVII. A.

ASCHEMONELLA.—HALIPHYSEMA.—DENDROPHRYA.

	Diam.	Page
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Fig. 1,	× 20	
Fig. 2,	× 12	
Fig. 3. Specimen incrusted with mud and with filose pseudopodia (?) extended, preserved in alcohol,	× 20	
,, 4, 5.—*Haliphysema tumanowiczii*, Bowerbank,		281
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Fig. 5. Single specimen, showing the pseudo-polythalamous foot,	× 50	
,, 6.—*Haliphysema ramulosum*, Bowerbank,	× 20	283
,, 7–9.—*Dendrophrya erecta*, Strethill Wright,		239
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Fig. 9. Apertural termination of one of the branches,	× 150	
,, 10–12.—*Dendrophrya radiata*, Strethill Wright,		238
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ASCHEMONELLA_HALIPHYSEMA_DENDROPHRYA

PLATE XXVIII.

PLATE XXVIII.

RHIZAMMINA.—HYPERAMMINA.—SAGENELLA.

	Diam.	Page
Figures 1–11.—*Rhizammina algæformis*, Brady,		274
Figs. 1, 2, 6. Specimens from sandy bottom; figs. 3, 4, 5, 7, 8, from Globigerina ooze.		
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Figs. 2, 3, 4, 5. Incomplete specimens,	× 8	
Figs. 6, 7. Fragments more highly magnified,	× 40	
Fig. 8. Fragment with part of the arenaceous coating removed, showing the chitinous envelope underneath,	× 15	
Fig. 9. Specimen from sandy bottom, after treatment with hydrochloric acid; mounted in Canada balsam,	× 40	
Fig. 10. Specimen from Globigerina ooze, similarly treated,	× 40	
Fig. 11. Specimen from sandy bottom, after treatment with solution of caustic potash; mounted in Canada balsam,	× 40	
„ 12, 13.—*Hyperammina arborescens*, Norman, sp.,		262
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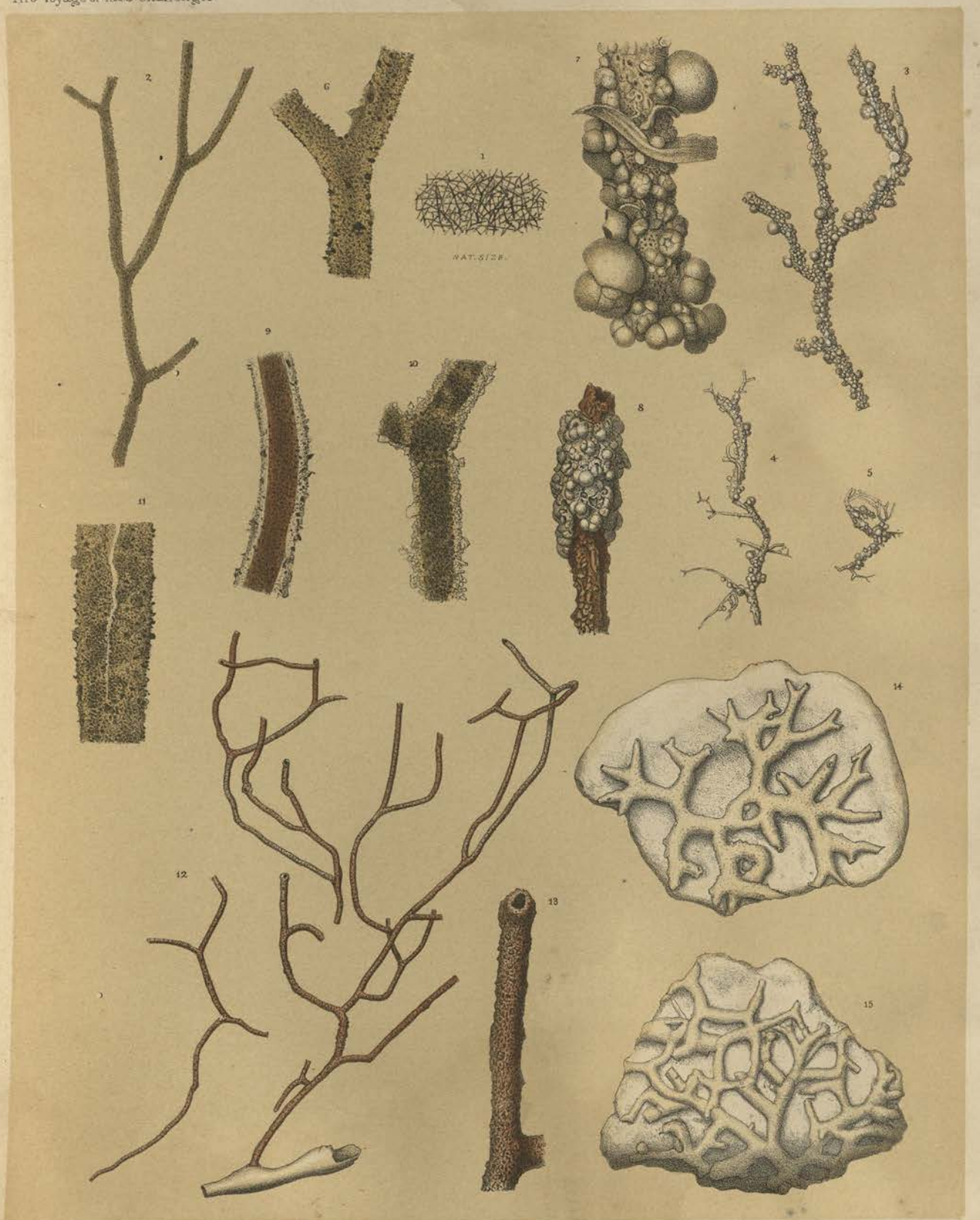
Fig. 13. Terminal branch with aperture,	× 100	
„ 14, 15.—*Sagenella frondescens*, Brady,	× 10	278
Specimens growing on fragments of Nullipore.		



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Hanhart imp.

RHIZAMMINA_HYPERAMMINA_SAGENELLA.

PLATE XXIX.

PLATE XXIX.

Rhizammina.—Botellina.

		Diam.	Page
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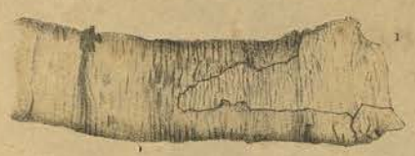
,, 4.—Similar organism, with sarcode filaments (filose pseudopodia ?) extended, . . .	×	30	278
,, 5–7.—*Rhizammina indivisa*, n. sp., . . .	×	12	277
,, 8–18.—*Botellina labyrinthica*, Brady, . . .	×	10	279

Figs. 8, 9. External aspect of the test.

Figs. 10–15. Fragments laid open longitudinally, showing the terminal chamber, and the labyrinthic structure of the tubular portion.

Figs. 16–18. Specimens broken transversely.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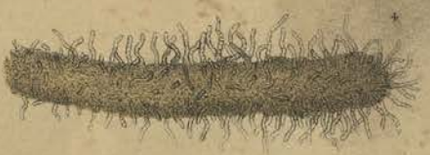
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PLATE XXX.

PLATE XXX.

Reophax.

		Diam.	Page
Figures 1–5.—*Reophax difflugiformis*, Brady,	×	50	289
Figs. 1, 2, 3 *a*, 4, 5. Lateral aspect; 3 *b*, oral aspect.			
,, 6.—*Reophax ampullacea*, Brady,	×	50	290
a, Lateral aspect; *b*, peripheral aspect.			
,, 7–11.—*Reophax fusiformis*, Williamson, sp.,	×	60	290
,, 12–17.—*Reophax scorpiurus*, Montfort,			291
Fig. 12 *a*, 13. Lateral aspect; 12 *b*, oral aspect,	×	30	
Fig. 14. × 50 diam.; fig. 15, × 40; fig. 16,	×	20	
Fig. 17. Longitudinal section of a coarsely arenaceous test,	×	30	
,, 18–20.—*Reophax pilulifera*, n. sp.,			292
Figs. 18–20. Lateral aspect,	×	25	
Fig. 19. Large terminal chamber with the cavity partially occupied by a smaller one,	×	10	
,, 21, 22.—*Reophax dentaliniformis*, Brady,			293
Fig. 21. × 35 diam.; fig. 22,	×	40	
,, 23, 24.—*Reophax bacillaris*, Brady,			293
Fig. 23. × 20 diam.; fig. 24,	×	17	

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LITUOLA (Reophax)

Hanhart imp.

PLATE XXXI.

PLATE XXXI.

Reophax.

		Diam.	Page
Figures 1–9.—*Reophax nodulosa*, Brady,			294
Fig. 1. Large specimen,	×	7	
Fig. 2. Somewhat smaller specimen, after having been completely decalcified with hydrochloric acid,	×	7	
Figs. 3–8. Specimens of various forms and dimensions,	×	10	
Fig. 9. Test laid open longitudinally to show the interior,	×	10	
„ 10–15.—*Reophax guttifera*, Brady,	×	50	295
Specimens in various stages of growth.			
„ 16, 17.—*Reophax spiculifera*, Brady,	×	50	295
„ 18–22.—*Reophax distans*, Brady,	×	15	296
„ 23–26.—*Reophax adunca*, Brady,	×	30	296

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LITUOLA (Reophax)

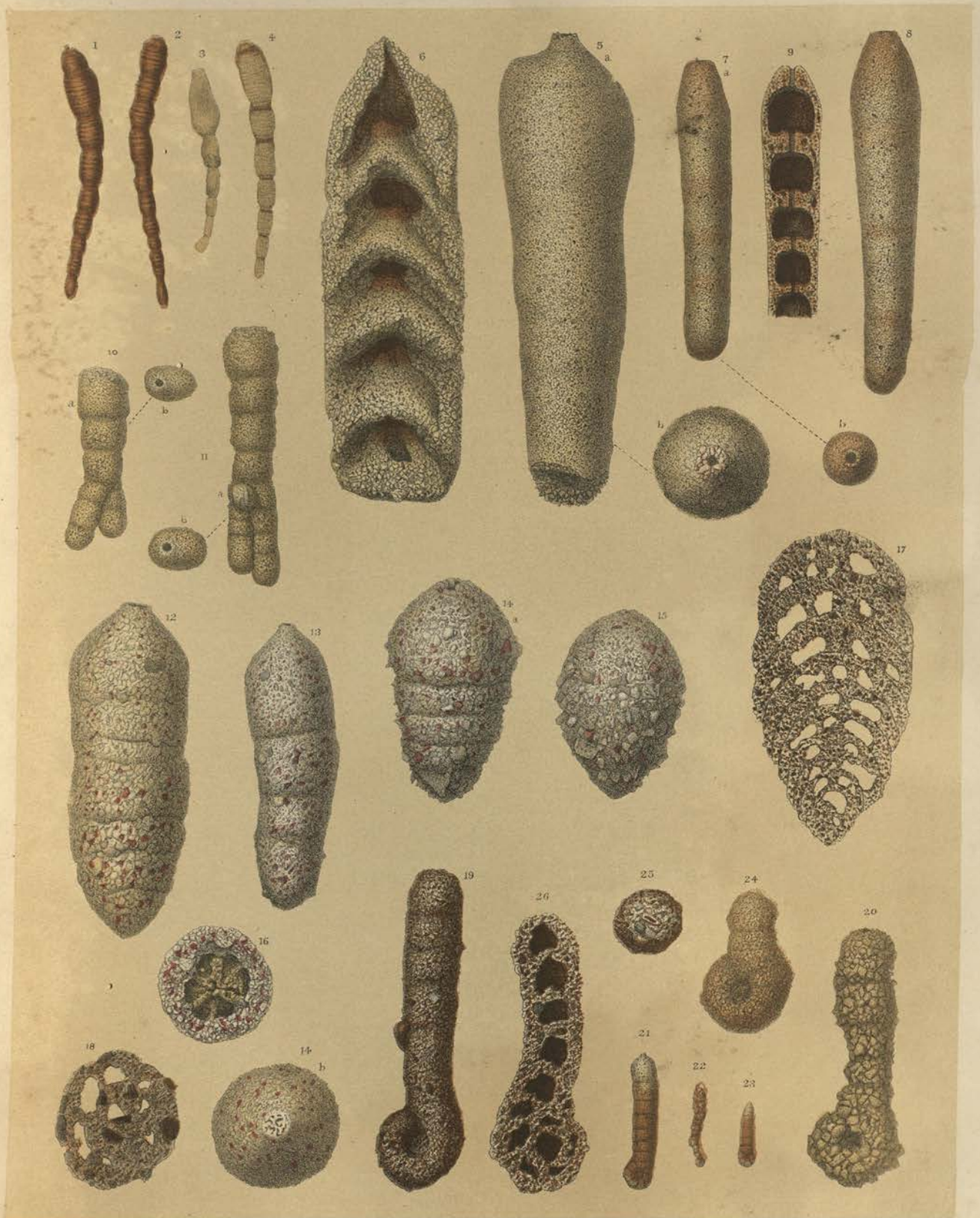
Hanhart imp.

PLATE XXXII.

PLATE XXXII.

REOPHAX.—HAPLOSTICHE.—HAPLOPHRAGMIUM.

		Diam.	Page
Figures 1–4.—*Reophax membranacea*, Brady,	×	50	297
Figs. 1, 2. Specimens mounted dry.			
Fig. 4. Specimen mounted in Canada balsam and viewed by transmitted light.			
Fig. 3. Specimen decalcified by hydrochloric acid, and mounted in Canada balsam.			
,, 5, 6.—*Reophax sabulosa*, Brady,	×	9	298
Fig. 5. *a*, Lateral aspect; *b*, oral aspect.			
Fig. 6. Specimen laid open longitudinally, to show the interior.			
,, 7–9.—*Reophax cylindrica*, n. sp.,	×	20	299
Figs. 7 *a*, 8. Lateral aspect; *b*, oral aspect.			
Fig. 9. Specimen laid open longitudinally, to show the the interior.			
,, 10, 11.—*Reophax findens*, Parker,	×	40	299
a, *a*, Lateral aspect; *b*, *b*, oral aspect.			
,, 12–18.—*Haplostiche soldanii*, Jones and Parker, sp.,			318
Fig. 12. Lateral aspect,	×	12	
Figs. 13, 14 *a*, 15. Lateral aspect; fig. 14 *b*, oral aspect,	×	15	
Fig. 16. Transverse fracture, showing the labyrinthic interior,	×	15	
Fig. 17. Longitudinal section of the test,	×	15	
Fig. 18. Transverse section,	×	15	
,, 19–26.—*Haplophragmium agglutinans*, d'Orbigny, sp.,			301
Fig. 19. Lateral aspect, × 25; figs. 20, 24, do.,	×	40	
Figs. 21–23. Lateral aspect,	×	50	
Fig. 25. Oral aspect,	×	40	
Fig. 26. Specimen laid open longitudinally, to show the interior,	×	40	



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LITUOLA. (Reophax. Haplostiche. Haplophragmium.)

PLATE XXXIII.

PLATE XXXIII.

HAPLOPHRAGMIUM.

		Diam.	Page
Figures 1–4.—*Haplophragmium pseudospirale*, Williamson, sp., .	×	35	302
Figs. 1, 2. Lateral aspect; figs. 3, 4, oral aspect.			
,, 5–12.—*Haplophragmium calcareum*, n. sp., . .	×	18	302
Figs. 5–9. Lateral aspect; figs. 10, 11, oral aspect.			
Fig. 12. Horizontal section of the test.			
,, 13–16.—*Haplophragmium tenuimargo*, Brady, . .	×	25	303
Figs. 13, 14. Lateral aspect; fig. 15, oral aspect; fig. 16, peripheral aspect.			
,, 17–19.—*Haplophragmium cassis*, Parker, sp., . .	×	35	304
Figs. 17, 18. Lateral aspect; fig. 19, peripheral aspect.			
,, 20–25.—*Haplophragmium foliaceum*, Brady, . .	×	40	304
Figs. 20–23. Specimens in various stages of growth; lateral aspect.			
Fig. 24. Specimen mounted in Canada balsam and viewed by transmitted light.			
Fig. 25. Peripheral aspect.			
,, 26–28.—*Haplophragmium emaciatum*, n. sp., . .	×	25	305
Figs. 26, 27. Lateral aspect; fig. 28, peripheral aspect.			

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LITUOLA (Haplophragmium)

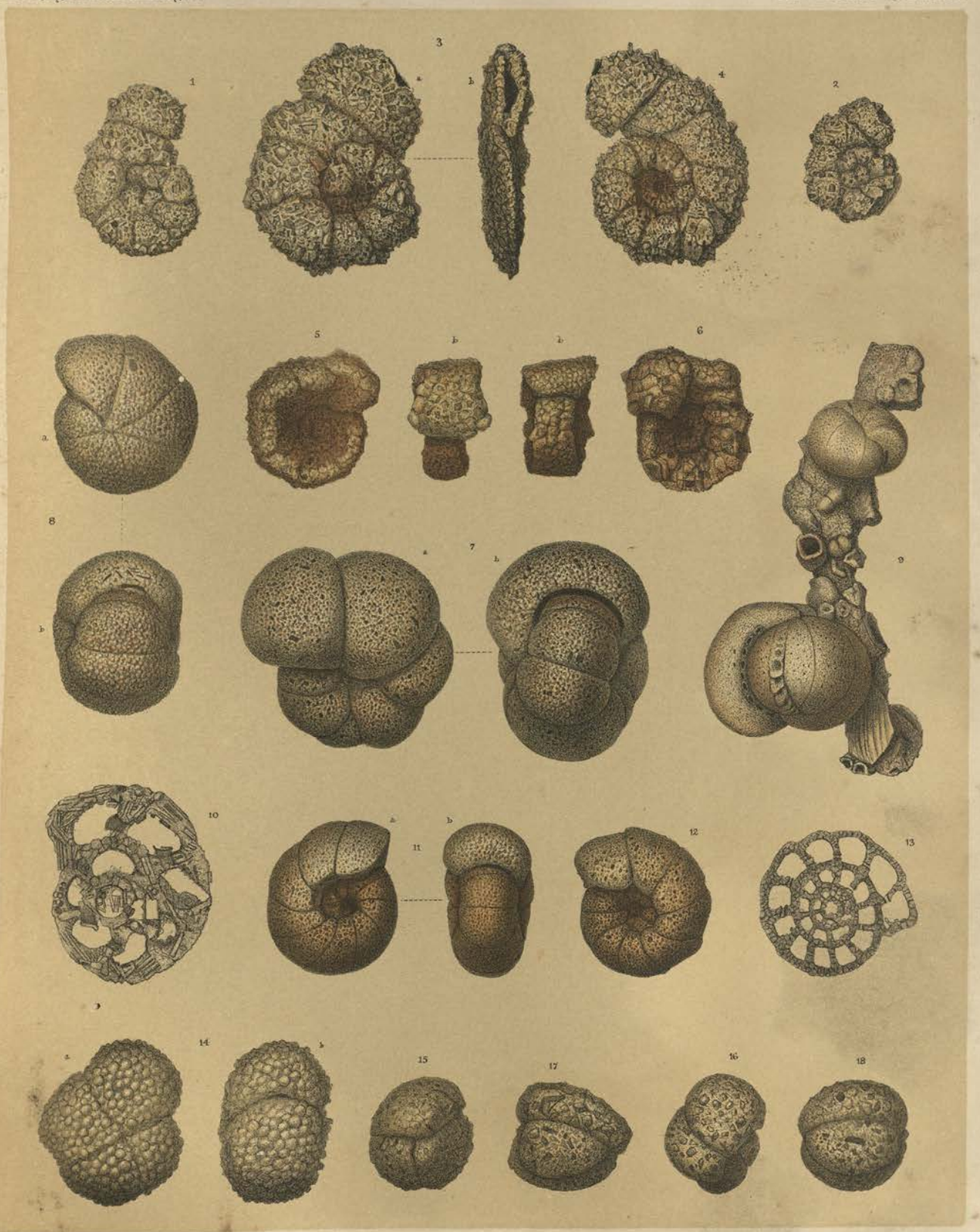
Hanhart & imp.

PLATE XXXIV.

PLATE XXXIV.

HAPLOPHRAGMIUM.

		Diam.	Page
Figures 1–4.—*Haplophragmium fontinense*, Terquem,	×	20	305
Figs. 1, 2, 3 *a*, 4. Lateral aspect; 3 *b*, peripheral aspect.			
,, 5, 6.—*Haplophragmium rotulatum*, Brady,	×	50	306
Figs. 5, 6. Lateral aspect; *b*, *b*, peripheral aspect.			
,, 7–10, 14.—*Haplophragmium latidorsatum*, Bornemann, sp.,			307
Figs. 7 *a*, 8 *a*. Lateral aspect; *b*, *b*, peripheral aspect,	×	20	
Fig. 9. Specimens built into the wall of an annelid-tube; the lower test showing a cribrate aperture,	×	15	
Fig. 10. Horizontal section of the test.			
Fig. 14. Small compressed variety, occurring off Kandavu,	×	40	
,, 11–13.—*Haplophragmium scitulum*, Brady,	×	40	308
Figs. 11 *a*, 12. Lateral aspect; 11 *b*, peripheral aspect.			
Fig. 13. Horizontal section of the test.			
,, 15–18.—*Haplophragmium glomeratum*, Brady,	×	100	309
Figs. 15, 16. Lateral aspect; figs. 17, 18, peripheral aspect.			



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Hanhart imp.

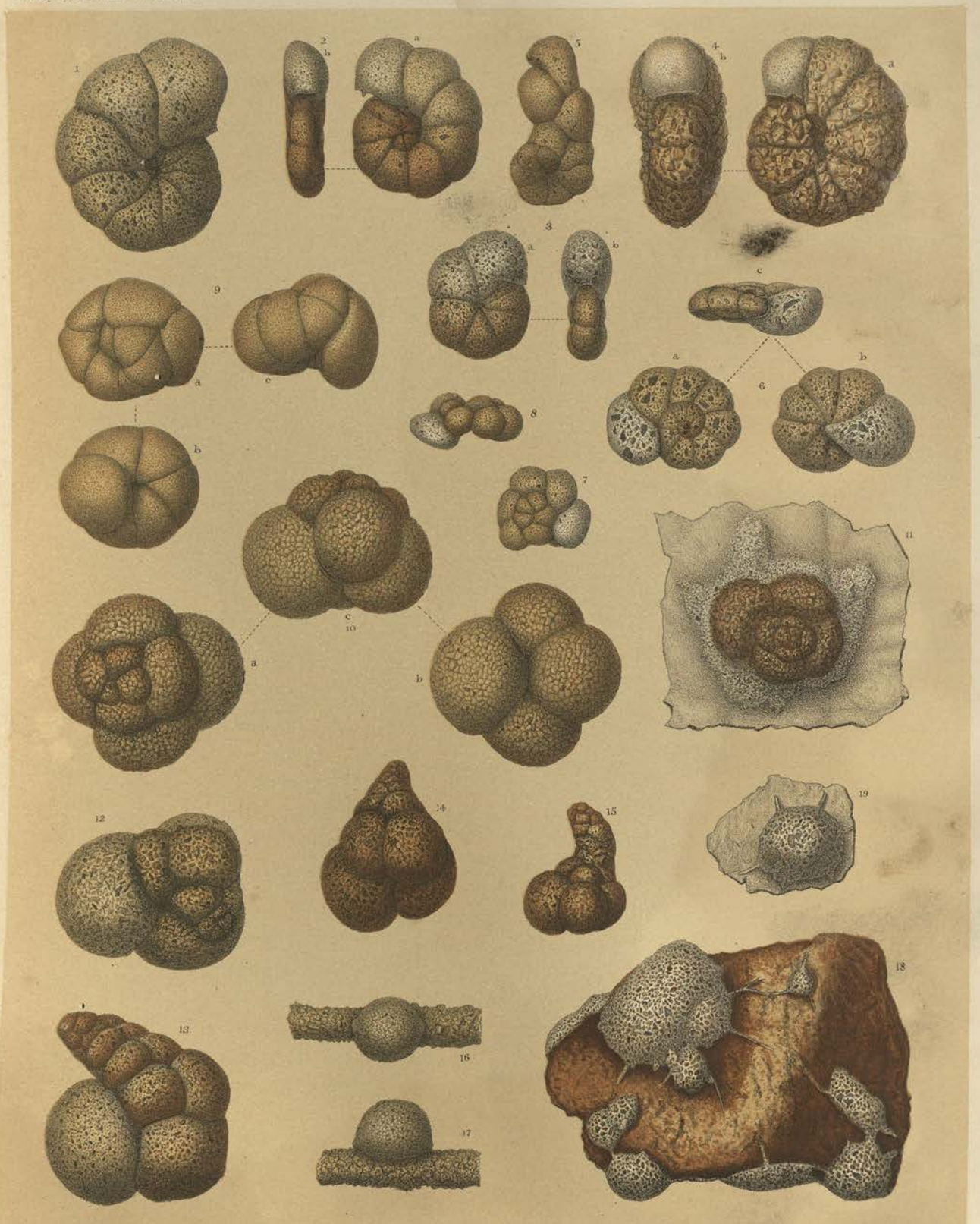
LITUOLA, (Haplophragmium.)

PLATE XXXV.

PLATE XXXV.

Haplophragmium.—Placopsilina.

		Diam.	Page
Figures 1–5.	*Haplophragmium canariense*, d'Orbigny, sp.,		310
	Figs. 1, 2 *a*, 3 *a*. Lateral aspect; *b*, *b*, peripheral aspect,	× 50	
	Fig. 4. *a*, Lateral aspect; *b*, peripheral aspect,	× 30	
	Fig. 5. Monstrous specimen,	× 50	311
,, 6–8.	*Haplophragmium nanum*, Brady,		311
	Fig. 6. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect,—typical form,	× 120	
	Fig. 7. Superior aspect; fig. 8, peripheral aspect,—irregularly built specimens,	× 60	
,, 9.	*Haplophragmium turbinatum*, Brady,	× 40	312
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 10, 11.	*Haplophragmium globigeriniforme*, Parker and Jones, sp.,	× 25	312
	Fig. 10. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
	Fig. 11. Adherent specimen.		
,, 12–15.	*Haplophragmium anceps*, n. sp.,		313
	Fig. 12. Superior aspect,	× 25	
	Figs. 13–15. Lateral aspect,	× 20	
,, 16, 17.	*Placopsilina bulla*, Brady,	× 20	315
	Fig. 16. Superior aspect; fig. 17, lateral aspect. Specimens growing adherent to fragments of *Rhabdammina*.		
,, 18, 19.	*Placopsilina vesicularis*, Brady,	× 12	316



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Hanhart imp

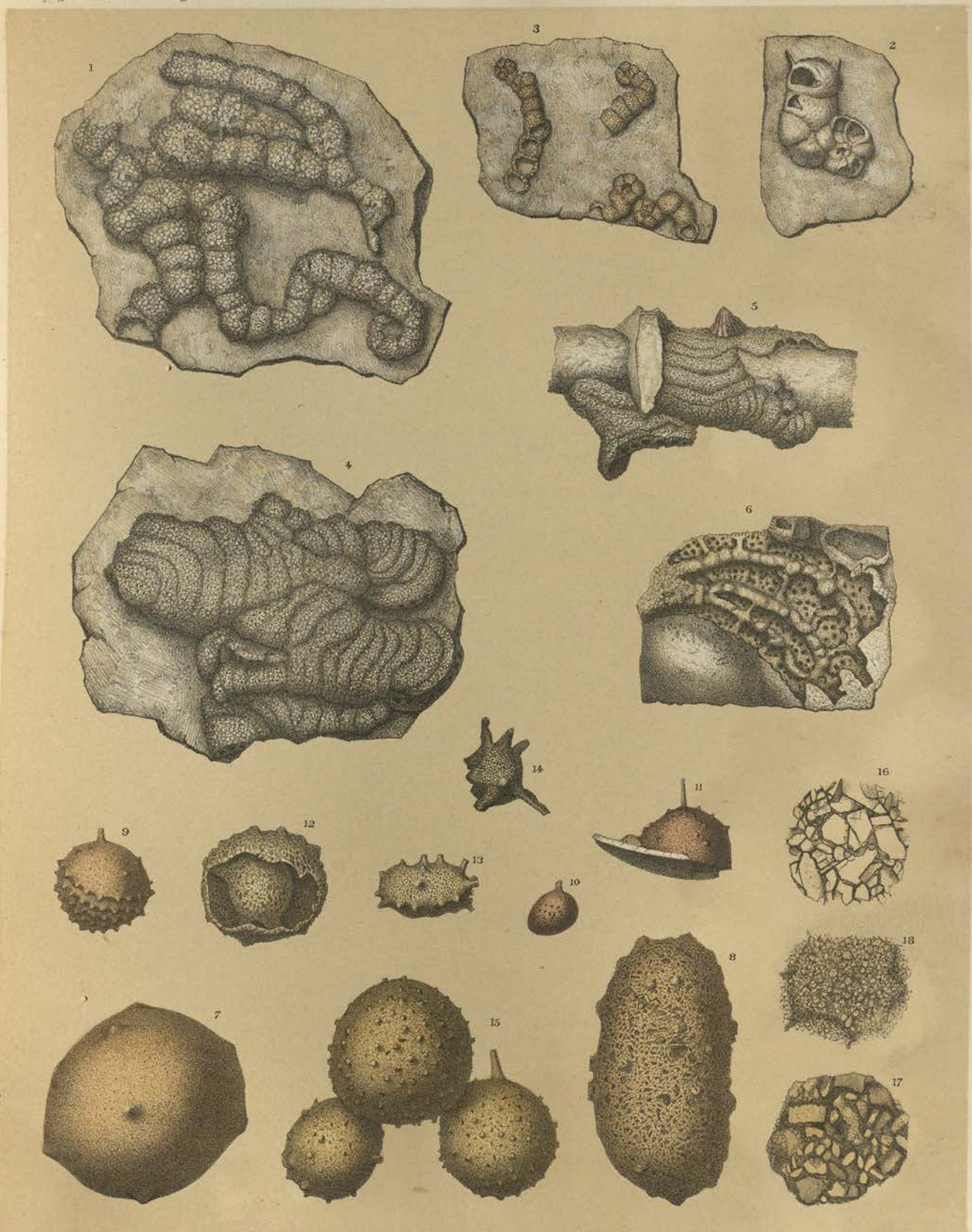
LITUOLA. (Haplophragmium_Placopsilina.)

PLATE XXXVI.

PLATE XXXVI.

PLACOPSILINA.—BDELLOIDINA.—THURAMMINA.

		Diam.	Page
Figures 1–3.—	*Placopsilina cenomana*, d'Orbigny, sp.,		315
	Fig. 1,	× 15	
	Fig. 2,	× 30	
	Fig. 3,	× 50	
,, 4–6.—	*Bdelloidina aggregata*, Carter,		319
	Figs. 4, 5. General aspect of the parasitic test,	× 15	
	Fig. 6. Portion laid open to show the interior,	× 30	
,, 7–18.—	*Thurammina papillata*, Brady,		321
	Fig. 7. Globular specimen; fig. 8, oval specimen,	× 30	
	Figs. 9, 10. Specimens with tubulated aperture,	× 50	
	Fig. 11. Adherent test,	× 50	
	Fig. 12. Specimen with an internal chamber,	× 50	
	Figs. 13, 14. Internal or primordial chambers, outer tests removed,	× 50	
	Fig. 15. Specimen formed of three adherent spheres,	× 50	
	Figs. 16–18. Portions of specimens from different localities, mounted in Canada balsam; showing the variability of the test in point of minute structure,	× 100	



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LITUOLA (Placopsilina-Bdelloidina)-THURAMMINA.

PLATE XXXVII.

PLATE XXXVII.

THURAMMINA.—CYCLAMMINA.

		Diam.	Page
Figure 1.—*Thurammina compressa*, Brady,	×	50	324
a, Lateral aspect; *b*, peripheral aspect.			
,, 2–7.—*Thurammina albicans*, Brady,			323
Figs. 2–5. Lateral aspect,	×	50	
Fig. 6. Specimen laid open, to show the thickness of the walls and the character of the internal cavity,	×	50	
Fig. 7. Section of the test, showing its minute structure,	×	100	
,, 8–16.—*Cyclammina cancellata*, Brady,			351
Figs. 8 *a*, 9 *a*, 10. Lateral aspect; figs. 8 *b*, 9 *b*, 11, peripheral aspect,	×	15	
Figs. 12, 13. Specimens laid open horizontally to show the internal structure,	×	15	
Fig. 14. Horizontal section of the test viewed by transmitted light,	×	15	
Fig. 15. Part of a specimen laid open transversely,	×	15	
Fig. 16. Exterior with a portion of the imperforate coating scraped away, showing the tubulated structure immediately beneath,	×	30	
,, 17–19.—*Cyclammina orbicularis*, Brady,	×	15	353
Fig. 17. Specimen laid open transversely showing the internal structure.			
Figs. 18 *a*, 19. Lateral aspect; 18 *b*, peripheral aspect.			
,, 20–23.—*Cyclammina pusilla*, Brady,			353
Figs. 20 *a*, 21. Lateral aspect; 20 *b*, peripheral aspect,	×	15	
Fig. 22. Specimen laid open horizontally to show the interior,	×	15	
Fig. 23. Portion of the same more highly magnified,	×	30	

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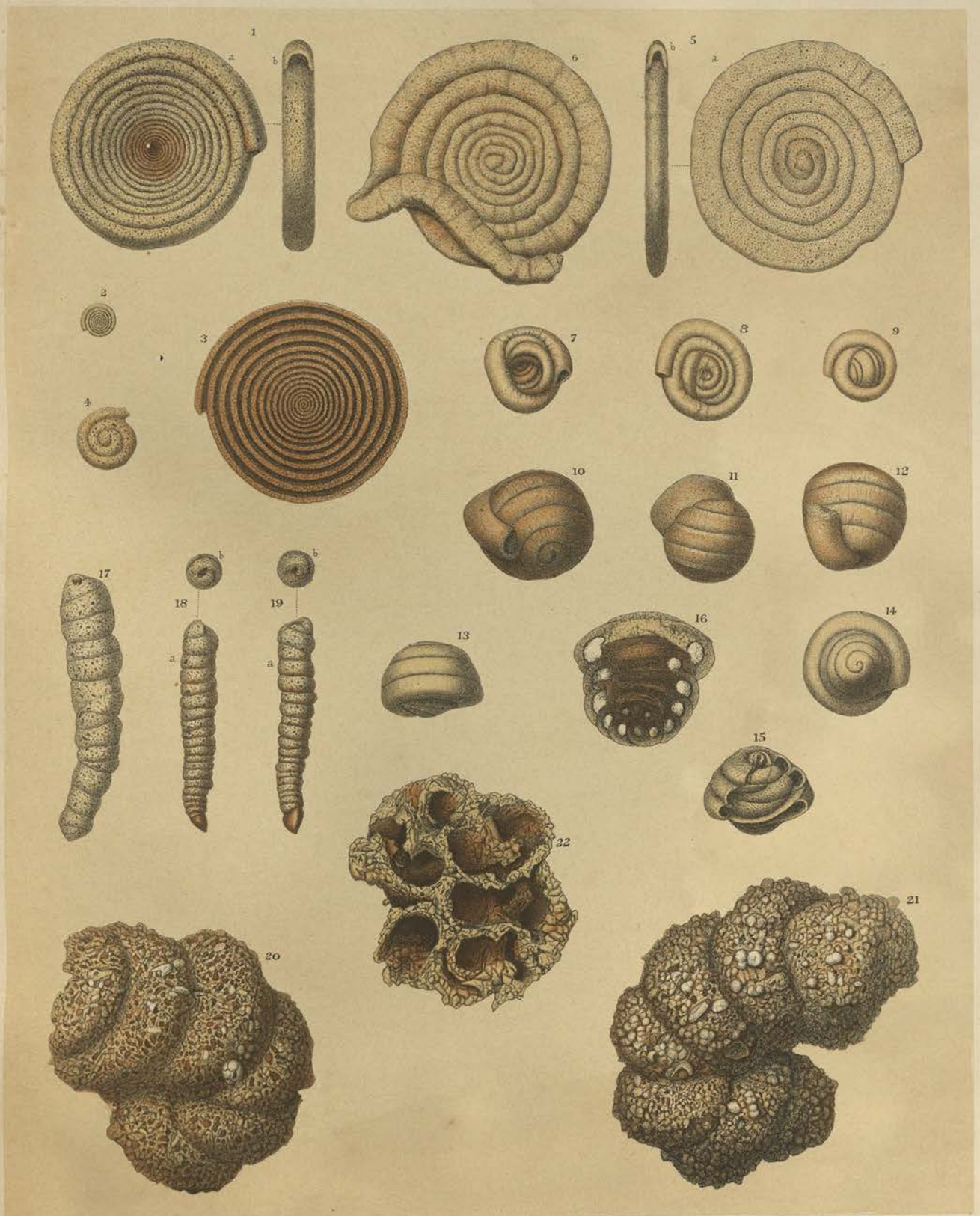
THURAMMINA-CYCLAMMINA.

PLATE XXXVIII.

PLATE XXXVIII.

AMMODISCUS.

	Diam.	Page
Figures 1–3.—*Ammodiscus incertus*, d'Orbigny, sp.,		330
Fig. 1. *a*, Lateral aspect; *b*, peripheral aspect,	× 15	
Fig. 2. Small specimen,	× 25	
Fig. 3. Test laid open horizontally, showing the spiral cavity and the relative thickness of the wall,	× 15	
„ 4–6.—*Ammodiscus tenuis*, Brady,		332
Fig. 4. Small specimen,	× 25	
Figs. 5 *a*, 6. Large examples, lateral aspect; 5 *b*, peripheral aspect,	× 15	
„ 7–9.—*Ammodiscus gordialis*, Jones and Parker, sp.,	× 70	333
„ 10–16.—*Ammodiscus charoides*, Jones and Parker, sp.,	× 70	334
Fig. 16. Section of the test.		
„ 17–19.—*Ammodiscus shoneanus*, Siddall, sp.,	× 100	335
a, *a*, Lateral aspect; *b*, *b*, oral aspect.		
„ 20–22.—*Ammodiscus spectabilis*, Brady,	× 12	336



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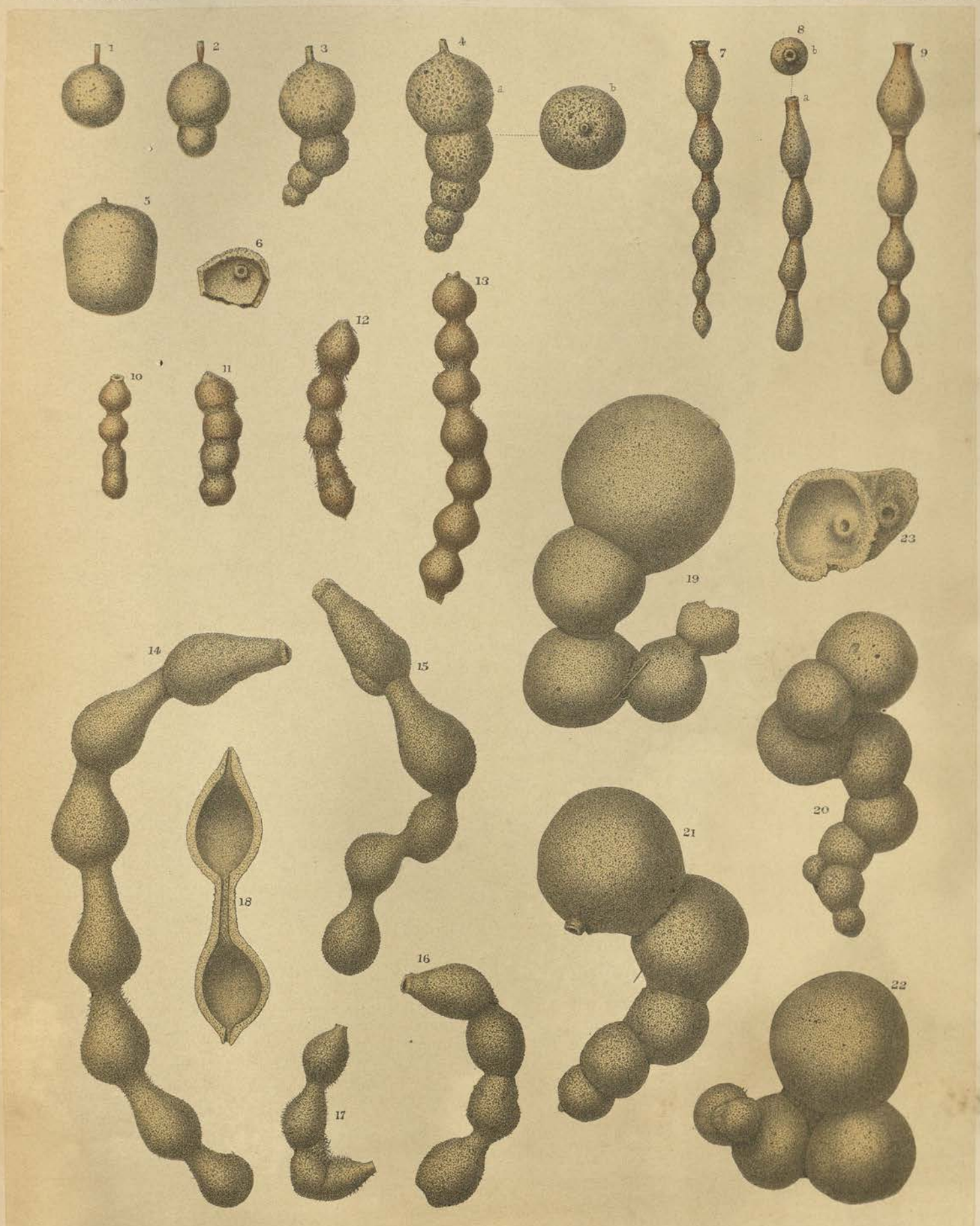
TROCHAMMINA. (Ammodiscus.)

PLATE XXXIX.

PLATE XXXIX.

Hormosina.

		Diam.	Page
Figures 1–6.—*Hormosina globulifera*, Brady, . . .	×	15	326
Figs. 1–4 *a*, Lateral aspect; 4 *b*, oral aspect.			
Fig. 5. Anomalous two-chambered specimen.			
Fig. 6. Fragment showing the aperture from the interior side.			
„ 7–9.—*Hormosina ovicula*, Brady, . .	×	15	327
Figs. 7, 8 *a*, 9. Lateral aspect; 8 *b*, oral aspect.			
„ 10–13.—*Hormosina monile*, Brady, . . .	×	10	328
„ 14–18.—*Hormosina carpenteri*, Brady, . . .	×	10	327
Fig. 18. Longitudinal section of the test.			
„ 19–23.—*Hormosina normani*, Brady, . . .	×	10	329
Fig. 23. Fragment showing a portion of the interior of two chambers with the apertures.			



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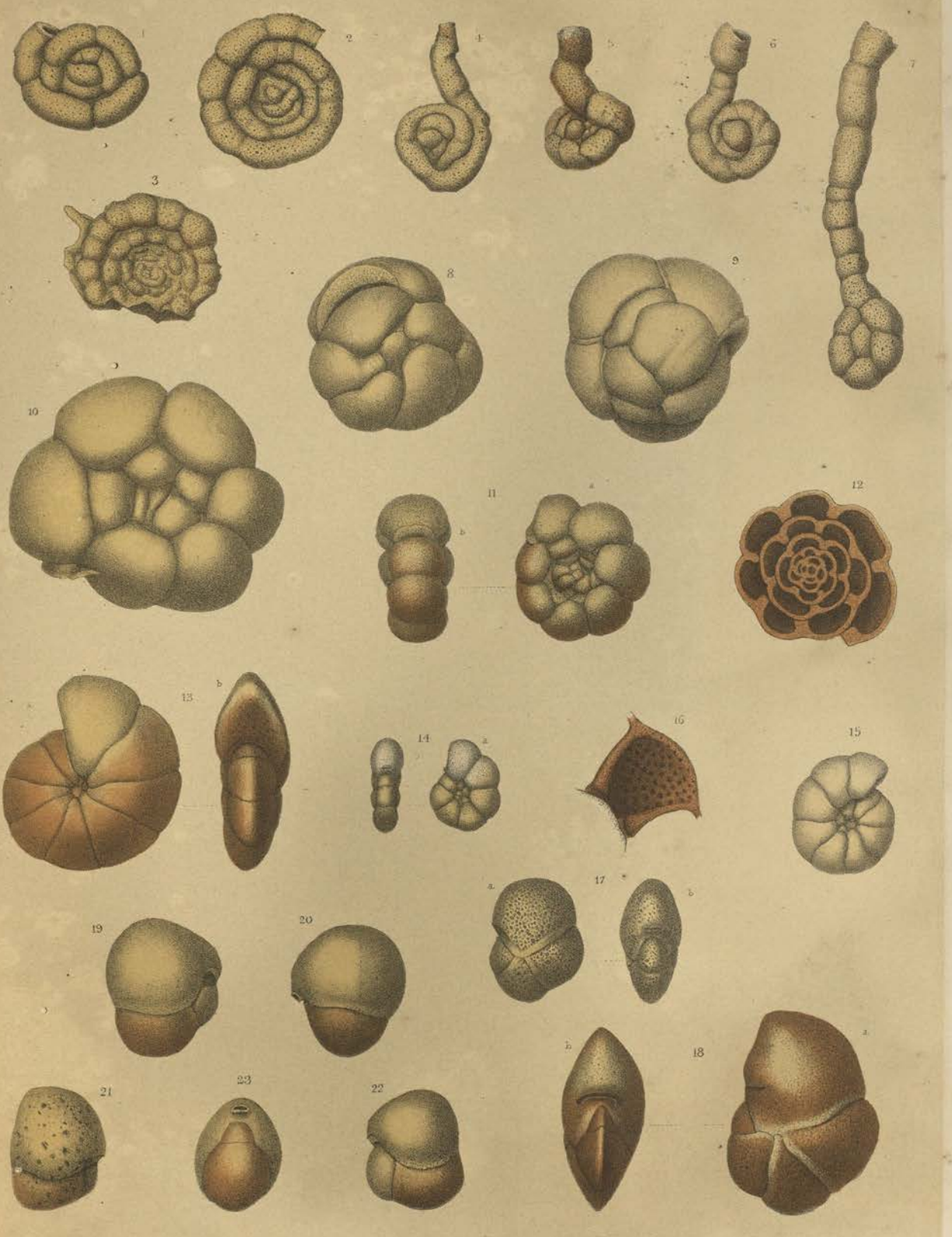
TROCHAMMINA. (Hormosina.)

PLATE XL.

PLATE XL.

TROCHAMMINA.

		Diam.	Page
Figures 1–3.—*Trochammina proteus*, Karrer, . . .	×	25	341
,, 4–7.—*Trochammina lituiformis*, Brady, . . .	×	20	342
,, 8, 9.—*Trochammina conglobata*, n. sp., . . .	×	30	341
,, 10–12.—*Trochammina coronata*, Brady, . . .	×	20	340
Figs. 10, 11 *a*, Lateral aspect; 11 *b*, peripheral aspect.			
Fig. 12. Test laid open horizontally to show the interior.			
,, 13–16.—*Trochammina trullissata*, Brady, ...			342
Figs. 13 *a*, 14 *a*. Lateral aspect; *b*, *b*, peripheral aspect,	×	30	
Fig. 15. Lateral aspect, . . .	×	50	
Fig. 16. Inner surface of the test, . .	×	60	
,, 17, 18.—*Trochammina ringens*, Brady, ...			343
Fig. 17. *a*, Lateral aspect; *b*, peripheral aspect, .	×	45	
Fig. 18. *a*, Lateral aspect; *b*, peripheral aspect, .	×	30	
,, 19–23.—*Trochammina galeata*, Brady, . . .	×	50	344
Figs. 19–22. Lateral aspect; fig. 23, peripheral aspect.			



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Hanhart imp.

TROCHAMMINA

PLATE XLI.

PLATE XLI.

TROCHAMMINA.—CARTERINA.—WEBBINA.

		Diam.	Page
Figures 1, 2.	*Trochammina pauciloculata*, Brady, . .	× 50	344
	a, *a*, Superior lateral aspect; *b*, *b*, inferior lateral aspect; *c*, *c*, peripheral aspect.		
,, 3.	*Trochammina squamata*, Jones and Parker, .	× 50	337
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 4.	*Trochammina inflata*, Montagu, sp., . .	× 50	338
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 5, 6.	*Trochammina nitida*, Brady, . . .	× 50	339
	Figs. 5 *a*, 6. Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 7–10.	*Carterina spiculotesta*, Carter, sp., . . .		346
	Fig. 7 *a*, Superior aspect; *b*, inferior aspect, .	× 50	
	Fig. 8. Young specimen, . . .	× 50	
	Figs. 9, 10. Fragments of the test mounted in Canada balsam, showing the form and arrangement of the spicules, ...	× 100	
,, 11.	*Webbina hemisphærica*, Jones, Parker, and Brady,	× 25	350
,, 12–16.	*Webbina clavata*, Jones and Parker, . .	× 25	349
	Figs. 12, 13. Adherent specimens.		
	Fig. 14. Small specimen with orifice on the superior surface.		
	Fig. 15. Inferior aspect, showing the cavity of the test.		
	Fig. 16. Long tubular neck, adherent to *Globigerinæ*.		

A.T. Hollick ad nat. del. et lith.

Hanhart. imp.

TROCHAMMINA. (Trochammina_Carterina_Webbina.)

PLATE XLII.

PLATE XLII.

TEXTULARIA.

		Diam.	Page
Figures 1–5.—*Textularia folium*, Parker and Jones, . .	×	60	357
Figs. 1–4. Lateral aspect; *b*, oral aspect. Fig. 5. Double specimen.			
,, 6.—*Textularia inconspicua*, n. sp., . . .	×	70	357
a, Lateral aspect; *b*, oral aspect; *c*, aboral aspect.			
,, 7.—*Textularia jugosa*, n. sp., . . .	×	70	358
a, Lateral aspect; *b*, oral aspect.			
,, 8–12.—*Textularia quadrilatera*, Schwager, . .	×	35	358
Figs. 8 *a*, 9, 10. Lateral aspect; figs. 8 *b*, 11, 12, peripheral aspect.			
,, 13, 14.—*Textularia concava*, Karrer, sp., . . .	×	35	360
a, *a*, Lateral aspect; *b*, *b*, oral aspect; *c*, peripheral aspect.			
,, 15, 16.—*Textularia carinata*, d'Orbigny, . . .	×	30	360
Figs. 15, 16. Lateral aspect; *b*, oral aspect.			
,, 17, 18.—*Textularia sagittula*, Defrance, . . .	×	35	361
Figs. 17, 18 *a*, Lateral aspect; *b*, oral aspect; *c*, peripheral aspect.			
,, 19–22.—*Textularia sagittula*, var. *fistulosa*, nov., . .	×	25	362
Figs. 19, 20. Lateral aspect; figs. 21, 22, peripheral aspect.			
,, 23, 24.—*Textularia rugosa*, Reuss, sp., . . .	×	25	363
Figs. 23 *a*, 24. Lateral aspect; 23 *b*, oral aspect.			
,, 25–29.—*Textularia siphonifera*, Brady, . . .	×	30	362
Figs. 25–28. Lateral aspect; *b*, oral aspect. Fig. 29. Transverse section of the test.			

A.T. Hollick, ad nat. del. et lith.

Hanhart imp.

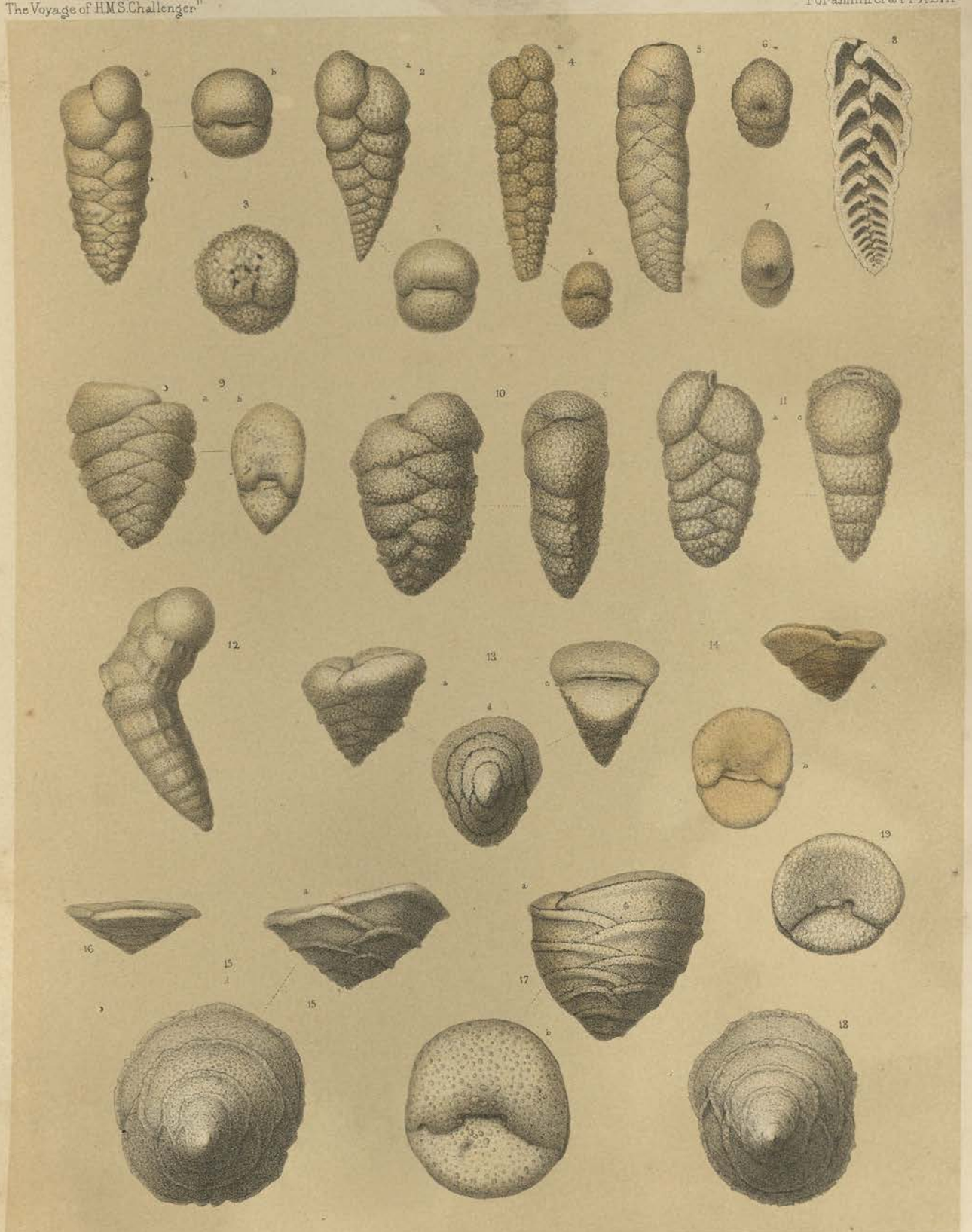
TEXTULARIA.

PLATE XLIII.

PLATE XLIII.

TEXTULARIA.

		Diam.	Page
Figures 1–3.—*Textularia agglutinans*, d'Orbigny,	×	25	363
Figs. 1, 2. *a*, *a*, Lateral aspect ; *b*, *b*, oral aspect.			
Fig. 3. Specimen with porous aperture, oral aspect.			
,, 4.—*Textularia agglutinans*, var. *porrecta*, nov.,	×	25	364
a, Lateral aspect ; *b*, oral aspect.			
,, 5–8.—*Textularia luculenta*, n. sp.,	×	20	364
Fig. 5. Lateral aspect ; figs. 6, 7, oral aspect.			
Fig. 8. Specimen laid open longitudinally, showing the change of the position of the aperture in the later segments.			
,, 9, 10.—*Textularia gramen*, d'Orbigny,			365
Fig. 9. *a*, Lateral aspect; *b*, oral aspect,	×	30	
Fig. 10. *a*, Lateral aspect ; *c*, peripheral aspect,	×	18	
,, 11.—*Textularia concava*, Karrer, sp.,	×	30	360
a, Lateral aspect ; *c*, peripheral aspect.			
,, 12.—*Textularia agglutinans*, deformed specimen, with traces of longitudinal costæ,	×	25	364
,, 13, 14.—*Textularia conica*, d'Orbigny,	×	40	365
a, *a*, Lateral aspect ; *b*, oral aspect ; *c*, peripheral aspect ; *d*, aboral aspect.			
,, 15–19.—*Textularia trochus*, d'Orbigny,			366
Figs. 15 *a*, 16. Lateral aspect ; figs. 15 *d*, 18, aboral aspect,	×	40	
Fig. 17. *a*, Lateral aspect ; figs. 17 *b*, 19, oral aspect,	×	25	



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TEXTULARIA

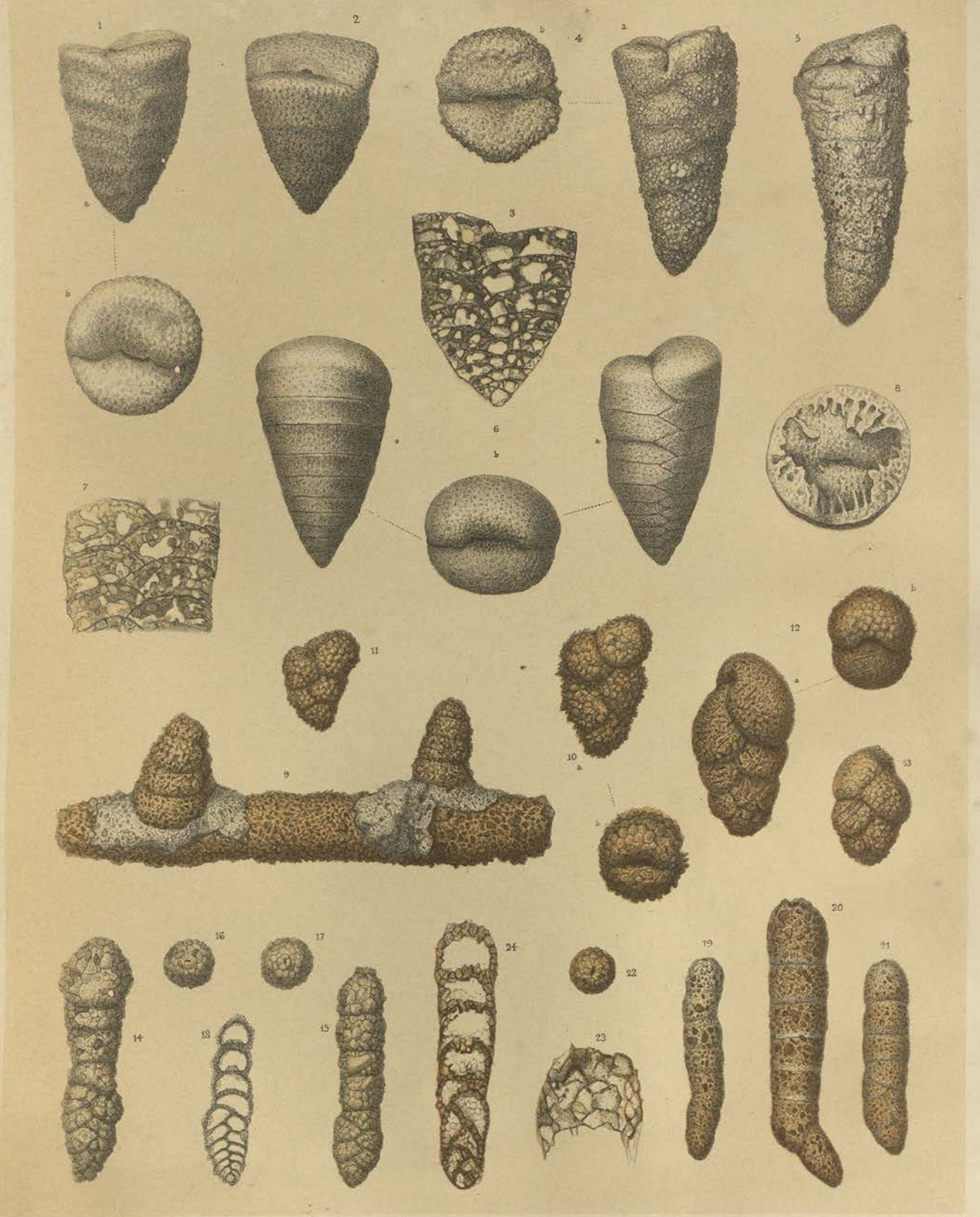
Hanhart imp

PLATE XLIV.

PLATE XLIV.

TEXTULARIA.—BIGENERINA.

	Diam.	Page
Figures 1–3.—*Textularia trochus*, d'Orbigny, ...		366
Fig. 1. *a*, Lateral aspect; *b*, oral aspect; fig. 2, peripheral aspect, ...	× 35	
Fig. 3. Longitudinal section, showing the labyrinthic structure of the interior, . . .	× 25	
,, 4, 5.—*Textularia turris*, d'Orbigny, ...		366
Fig. 4. *a*, Lateral aspect; *b*, oral aspect, . .	× 18	
Fig. 5. Peripheral aspect, . . .	× 15	
,, 6–8.—*Textularia barrettii*, Jones and Parker, . . .		367
Fig. 6. *a*, Lateral aspect; *b*, oral aspect; *c*, peripheral aspect, ...	× 18	
Fig. 7. Longitudinal section, showing the labyrinthic interior, ...	× 20	
Fig. 8. Test fractured transversely, . .	× 30	
,, 9–13.—*Textularia aspera*, Brady, . . .	× 20–25	367
Fig. 9. Specimens growing upon a fragment of *Rhabdammina*.		
Figs. 10 *a*, 11, 12 *a*, 13. Lateral aspect; *b*, *b*, oral aspect.		
,, 14–18.—*Bigenerina nodosaria*, d'Orbigny, . .	× 35	369
Figs. 14, 15. Lateral aspect; figs. 16, 17, oral aspect.		
Fig. 18. Longitudinal section of the test.		
,, 19–24.—*Bigenerina digitata*, d'Orbigny, ...		370
Figs. 19, 20, 21. Lateral aspect; fig. 22, oral aspect, .	× 35	
Fig. 23. Section of the wall, showing the arenaceous structure, ...	× 60	
Fig. 24. Longitudinal section of the test, . .	× 35	



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Hanhart imp.

TEXTULARIA (Textularia. Bigenerina.)

PLATE XLV.

PLATE XLV.

BIGENERINA.—PAVONINA.—SPIROPLECTA.

		Diam.	Page
Figures 1–4.—*Bigenerina capreolus*, d'Orbigny, sp., . .	×	20	372
Figs. 1 *a*, 2. Adult specimens, lateral aspect; 1 *b*, oral aspect.			
Fig. 3. Young specimen, lateral aspect; fig. 4, oral aspect.			
,, 5–8.—*Bigenerina pennatula*, Batsch, sp., . .	×	20	373
Figs. 5, 6, 7. Lateral aspect; fig. 8, oral aspect.			
,, 9–16.—*Bigenerina robusta*, Brady, . . .	×	14	371
Figs. 9, 10. Lateral aspect; figs. 11, 12, oral aspect.			
Fig. 13. Specimen laid open longitudinally to show the interior.			
Fig. 14. Test fractured transversely.			
Figs. 15, 16. Monstrous specimens, showing different forms of aperture.			
,, 17–21.—*Pavonina flabelliformis*, d'Orbigny, . . .			374
Fig. 17. Lateral aspect, . . .	×	50	
Figs. 18, 19. Lateral aspect; figs. 20, 21, oral aspect, .	×	60	
,, 22, 23.—*Spiroplecta annectens*, Parker and Jones, . .	×	60	376
Figs. 22, 23 *a*, Lateral aspect; *b*, oral aspect.			
,, 24.—*Spiroplecta americana*, Ehrenberg, . .	×	60	376
a, Lateral aspect; *b*, oral aspect.			
,, 25–27.—*Spiroplecta biformis*, Parker and Jones, sp., . .			376
Fig. 25. Lateral aspect, . . .	×	100	
Figs. 26 *a*, 27. Lateral aspect; 26 *b*, oral aspect, .	×	80	

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TEXTULARIA (Bigenerina_Pavonina_Spiroplecta.)

PLATE XLVI.

PLATE XLVI.

GAUDRYINA.—CHRYSALIDINA.

		Diam.	Page
Figures 1–4.—*Gaudryina pupoides*, d'Orbigny, . . .	×	30	378
Figs. 1, 2 *a*, 4 *a*. Lateral aspect; fig. 2 *b*, oral aspect; figs. 3, 4 *b*, peripheral aspect.			
,, 5, 6.—*Gaudryina pupoides*, var. *chilostoma*, Reuss, . .			379
Fig. 5. *a*, Lateral aspect; *b*, peripheral aspect, .	×	25	
Fig. 6. *a*, Lateral aspect; *b*, oral aspect, . .	×	40	
,, 7.—*Gaudryina scabra*, n. sp., . . .	×	20	381
a, Lateral aspect; *b*, peripheral aspect.			
,, 8–11.—*Gaudryina baccata*, Schwager, ...			379
Figs. 8, 10. Lateral aspect; fig. 9, peripheral aspect, .	×	20	
Fig. 11. Portion of a specimen with the sutural depressions bridged over at intervals, .	×	60	
,, 12.—*Gaudryina filiformis*, Berthelin, . . .	×	50	380
a, Lateral aspect; *b*, peripheral aspect; *c*, oral aspect.			
,, 13.—*Gaudryina subrotundata*, Schwager, . .	×	20	380
a, Lateral aspect; *b*, peripheral aspect; *c*, oral aspect.			
,, 14–16.—*Gaudryina rugosa*, d'Orbigny, . . .			381
Fig. 14. Lateral aspect, . .	×	35	
Fig. 15. *a*, Lateral aspect; *b*, oral aspect, . .	×	20	
Fig. 16. *a*, Lateral aspect; *b*, oral aspect, . .	×	25	
,, 17–19.—*Gaudryina siphonella*, Reuss, . . .	×	40	382
Figs. 17 *a*, 18, 19. Lateral aspect; 17 *b*, oral aspect.			
,, 20, 21.—*Chrysalidina dimorpha*, Brady, . . .	×	70	388
Figs. 20, 21 *a*. Lateral aspect; *b*, oral aspect.			

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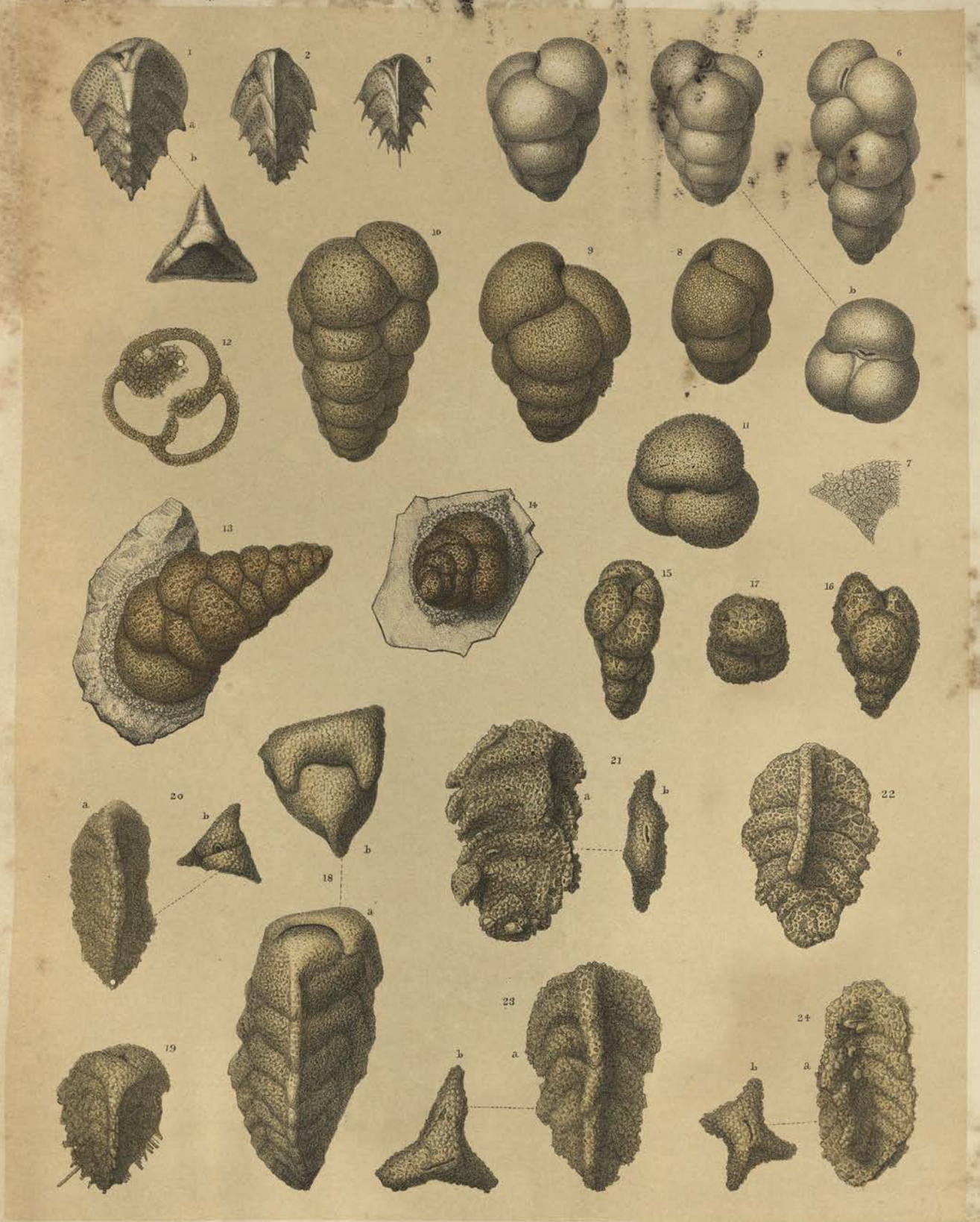
TEXTULARIA, (Gaudryina - Chrysalidina.)

PLATE XLVII.

PLATE XLVII.

VERNEUILINA.

		Diam.	Page
Figures 1–3.—*Verneuilina spinulosa*, Reuss,	×	70	384
Figs. 1 *a*, 2, 3. Lateral aspect; 1 *b*, oral aspect.			
„ 4–7.—*Verneuilina pygmæa*, Egger, sp.,			385
Figs. 4, 6, Lateral aspect,	×	35	
Fig. 5. *a*, Lateral aspect; *b*, oral aspect,	×	25	
Fig. 7. Section of the shell, showing its finely arenaceous structure,	×	120	
„ 8–14.—*Verneuilina propinqua*, n. sp.,			387
Figs. 8, 9. Lateral aspect,	×	20	
Fig. 10. Lateral aspect; fig. 11, oral aspect,	×	14	
Fig. 12. Transverse section of the test.			
Figs. 13, 14. Adherent specimens,	×	20	
„ 15–17.—*Verneuilina polystropha*, Reuss, sp.,	×	60	386
Figs. 15, 16. Lateral aspect; fig. 17, oral aspect.			
„ 18–20.—*Verneuilina triquetra*, Münster, sp.,			383
Fig. 18. *a*, Lateral aspect; *b*, oral aspect,	×	14	
Figs. 19, 20 *a*. Lateral aspect; *b*, oral aspect,	×	20	
„ 21–24.—*Verneuilina variabilis*, n. sp.,	×	14	385
a, *a*, *a*, Lateral aspect of specimens of various forms; *b*, *b*, *b*, oral aspect of the same.			



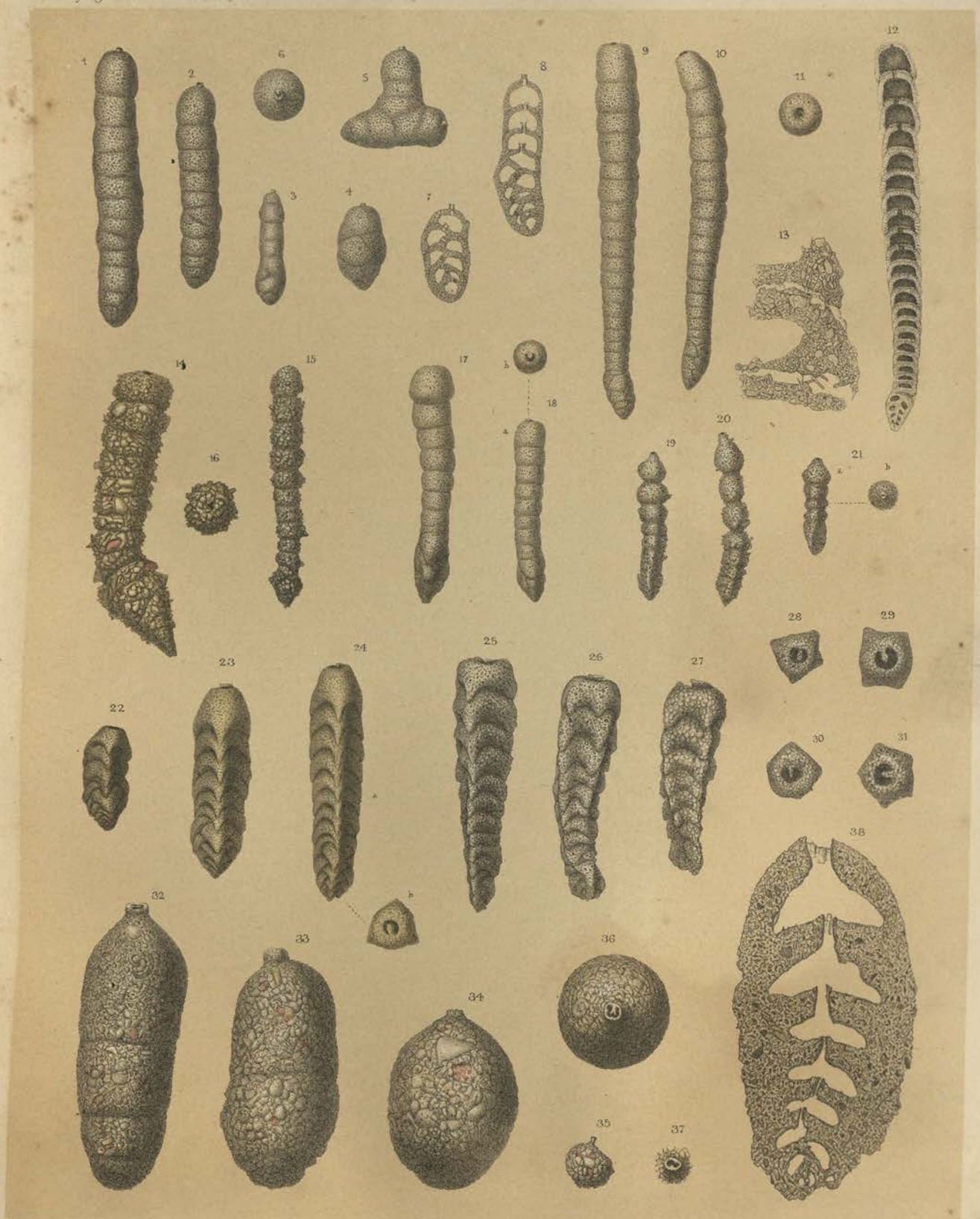
TEXTULARIA (Verneuilina.)

PLATE XLVIII.

PLATE XLVIII.

CLAVULINA.

		Diam.	Page
Figures 1–13.—*Clavulina communis*, d'Orbigny,			394
Figs. 1, 2. Lateral aspect; fig. 6, oral aspect,	×	25	
Fig. 3. Lateral aspect,	×	30	
Fig. 4. Arrested specimen,	×	30	
Fig. 5. Monstrous specimen,	×	25	
Figs. 7, 8. Longitudinal sections of the test,	×	30	
Figs. 9, 10. Long specimens, lateral aspect; fig. 11, oral aspect,	×	15	
Fig. 12. Similar specimen laid open to show the interior,	×	15	
Fig. 13. Portion of a longitudinal section more highly magnified, showing the minute structure of the test,	×	100	
,, 14–18.—*Clavulina parisiensis*, d'Orbigny,			395
Figs. 14, 15. Lateral aspect; fig. 16, oral aspect,	×	18	
Figs. 17, 18 *a*. Lateral aspect; *b*, oral aspect,	×	30	
,, 19–21.—*Clavulina parisiensis*, var. *humilis*, nov.,	×	40	395
Figs. 19, 20, 21 *a*. Lateral aspect; *b*, oral aspect.			
,, 22–24.—*Clavulina angularis*, d'Orbigny,	×	35	396
Figs. 22, 23, 24 *a*. Lateral aspect; *b*, oral aspect.			
,, 25–31.—*Clavulina angularis*, var. *difformis*, nov.,	×	40	396
Figs. 25–27. Lateral aspect; figs. 28–31, oral aspect.			
,, 32–38.—*Clavulina cylindrica*, Hantken,			396
Figs. 32–35. Lateral aspect; figs. 36, 37, oral aspect,	×	20	
Fig. 38. Longitudinal section, showing the minute structure of the test and the arrangement of the chambers,	×	15	



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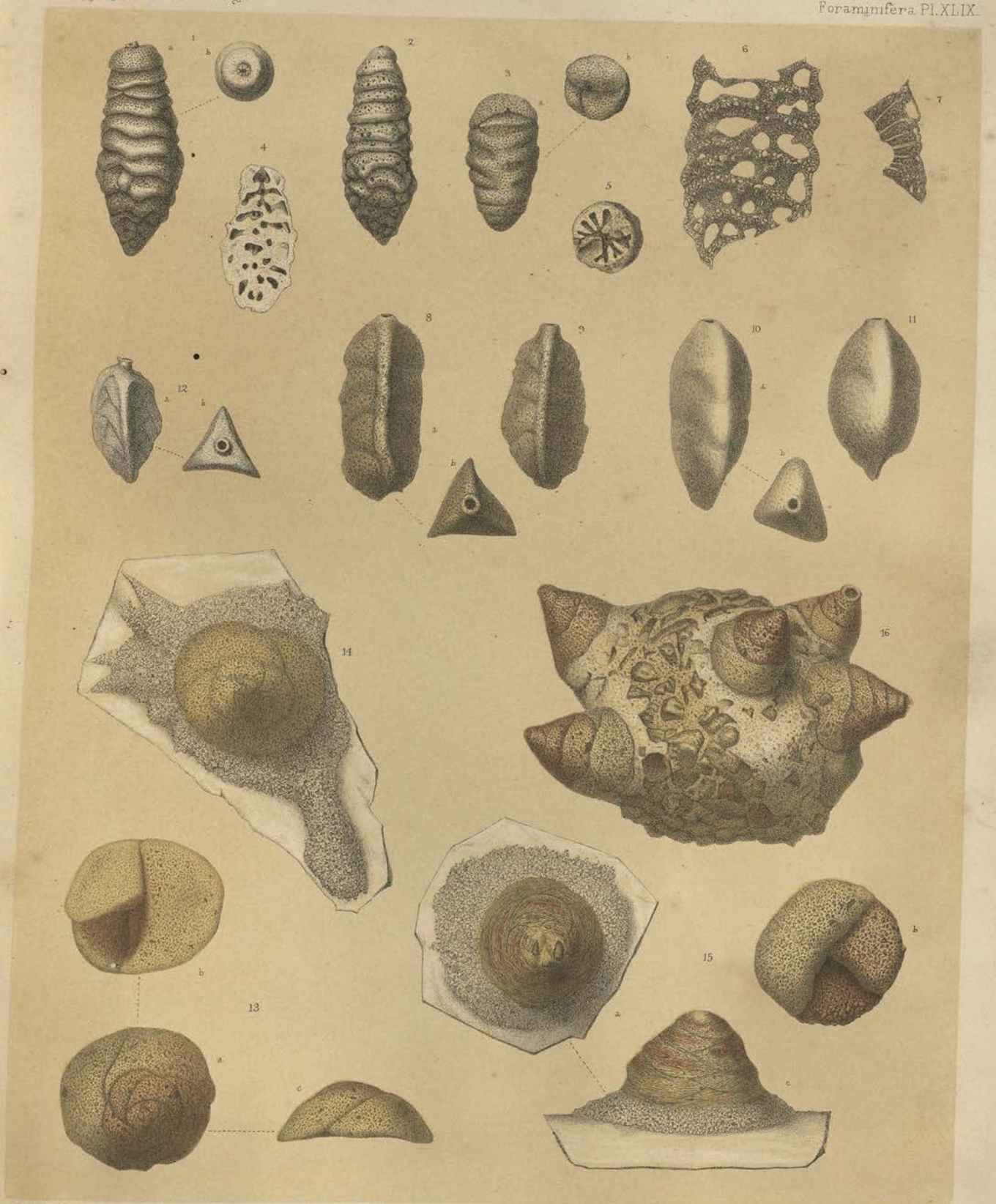
VALVULINA (Clavulina.)

PLATE XLIX.

PLATE XLIX.

TRITAXIA.—VALVULINA.

	Diam.	Page
Figures 1–7.—*Tritaxia caperata*, Brady,		390
Figs. 1 *a*, 2. Adult specimens, lateral aspect; 1 *b*, oral aspect,	× 16	
Fig. 3 *a*, Young specimen, lateral aspect; *b*, oral aspect,	× 16	
Fig. 4. Specimen laid open longitudinally; fig. 5, specimen broken transversely;—showing the labyrinthic interior,	× 16	
Fig. 6. Longitudinal section of the test,	× 30	
Fig. 7. Portion of the outer wall of the same more highly magnified, showing the pore-canals,	× 120	
,, 8, 9.—*Tritaxia tricarinata*, Reuss,	× 35	389
Figs. 8 *a*, 9. Lateral aspect; *b*, oral aspect.		
,, 10, 11.—*Tritaxia indiscreta*, Brady,	× 25	389
Figs. 10 *a*, 11. Lateral aspect; 10 *b*, oral aspect.		
,, 12.—*Tritaxia lepida*, Brady,	× 80	389
a, Lateral aspect; *b*, oral aspect.		
,, 13, 14.—*Valvulina fusca*, Williamson sp.,		392
Fig. 13. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect,	× 50	
Fig. 14. Adherent specimen,	× 40	
,, 15, 16.—*Valvulina conica*, Parker and Jones,		392
Fig. 15. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect,	× 50	
Fig. 16. Colony of specimens adherent to the test of *Saccammina sphærica*,	× 40	



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TEXTULARIA (Tritaxia)_VALVULINA.

PLATE L.

PLATE L.

Bulimina.

		Diam.	Page
Figures 1–4.—*Bulimina elegans*, d'Orbigny,			398
	Fig. 1. *a*, Lateral aspect ; *b*, oral aspect, ×	60	
	Figs. 2–4. Lateral aspects, ×	50	
,, 5, 6.—*Bulimina elegans*, var *exilis*, nov.,	×	60	399
	Figs. 5 *a*, 6. Lateral aspect ; *b*, oral aspect.		
,, 7–10.—*Bulimina pyrula*, d'Orbigny,			399
	Figs. 7 *a*, Lateral aspect ; *b*, oral aspect, ×	40	
	Figs. 8, 9, 10. Lateral aspect, ×	50	
,, 11, 12.—*Bulimina pyrula*, var. *spinescens*, nov.,	×	60	400
	Lateral aspects.		
,, 13.—*Bulimina ovata*, d'Orbigny,	×	50	400
	Lateral aspects.		
,, 14.—*Bulimina affinis*, d'Orbigny,	×	50	400
	Lateral aspects.		
,, 15.—*Bulimina pupoides*, d'Orbigny,	×	45	400
	Lateral aspects.		
,, 16.—*Bulimina subcylindrica*, Brady,	×	80	404
	Lateral aspects.		
,, 17, 18.—*Bulimina subteres*, Brady,			403
	Lateral aspects ; fig. 17, × 60 ;—fig. 18, ×	80	
,, 19.—*Bulimina declivis*, Reuss,	×	70	404
	Lateral aspects.		
,, 20–22.—*Bulimina elegantissima*, d'Orbigny,	×	80	402
	Lateral aspects.		
,, 23, 24.—*Bulimina elegantissima*, var. *seminuda*, Terquem,	×	80	403
	Lateral aspects.		

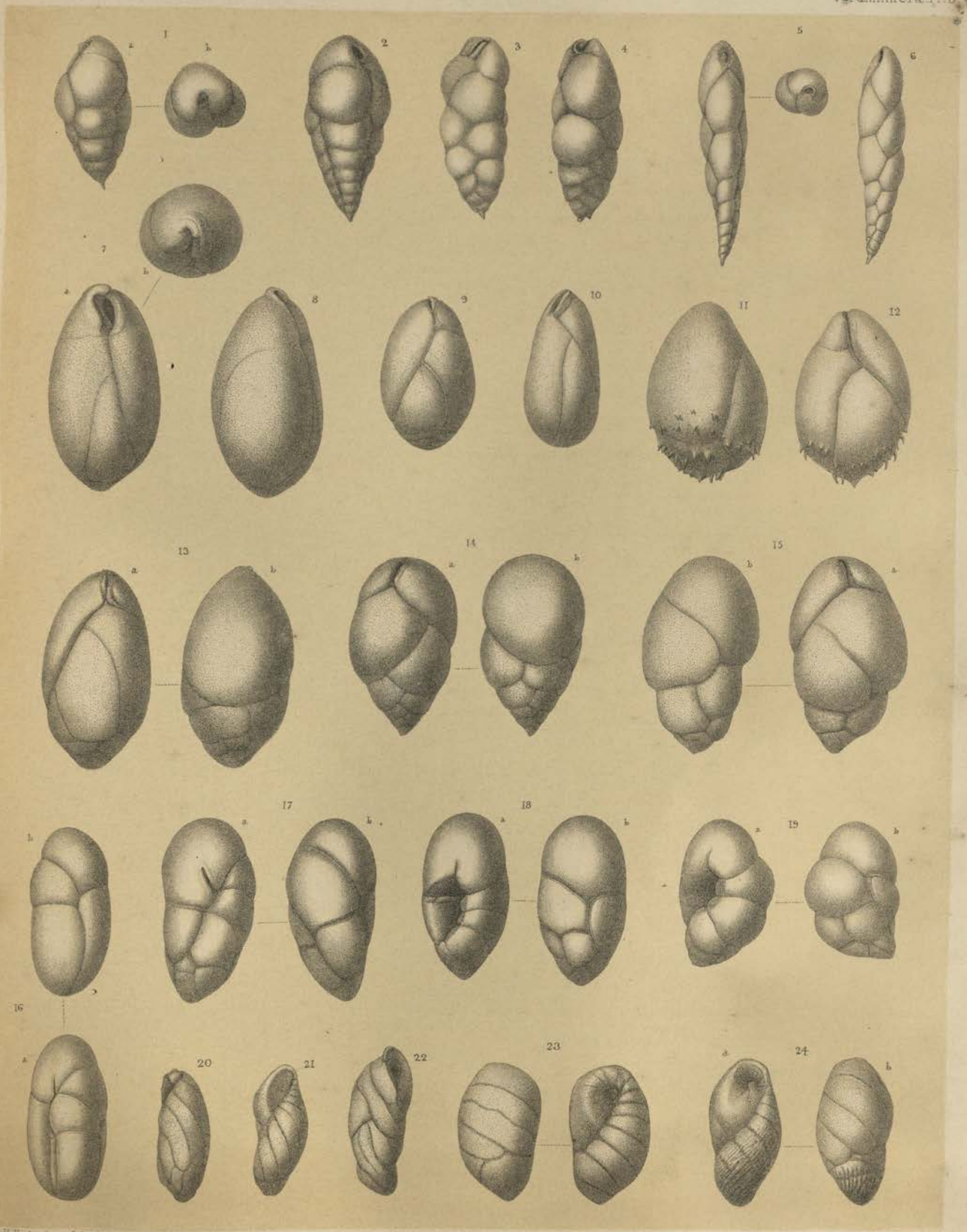
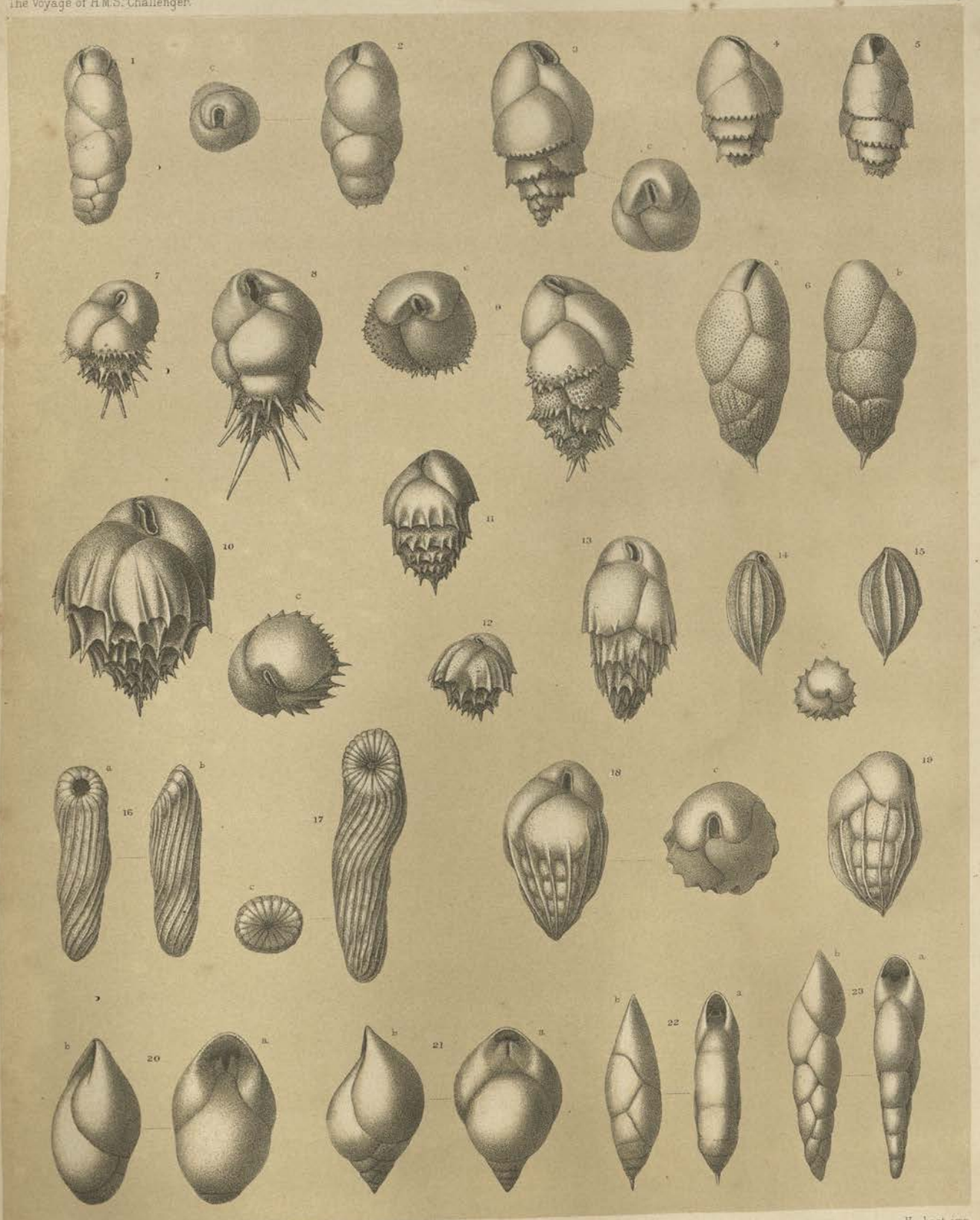


PLATE LI.

PLATE LI.

Bulimina.—Pleurostomella.

			Diam.	Page
Figure 1.	*Bulimina elongata*, d'Orbigny,	×	70	401
,, 2.	Intermediate specimen, with characters approaching those of *Bulimina ovata*,	×	80	401
,, 3–5.	*Bulimina marginata*, d'Orbigny,	×	80	405
	Figs. 3, 4, 5. Lateral aspect; *c*, oral aspect.			
,, 6.	*Bulimina subornata*, Brady,	×	80	402
	Lateral aspects.			
,, 7–9.	*Bulimina aculeata*, d'Orbigny,	×	60	406
	Figs. 7, 8, 9. Lateral aspects; *c*, oral aspect.			
,, 10–13.	*Bulimina inflata*, Seguenza,	×	60	406
	Figs. 10, 11, 12, 13. Lateral aspects; *c*, oral aspect.			
,, 14, 15.	*Bulimina rostrata*, n. sp.,	×	80	408
	Figs. 14, 15. Lateral aspects; *c*, oral aspect.			
,, 16, 17.	*Bulimina williamsoniana*, Brady,	×	80	408
	Figs. 16 *a*, *b*, 17. Lateral aspects; *c*, oral aspect.			
,, 18, 19.	*Bulimina buchiana*, d'Orbigny,	×	80	407
	Figs. 18, 19. Lateral aspects; *c*, oral aspect.			
,, 20.	*Pleurostomella brevis*, Schwager,	×	40	411
	a, Peripheral aspect; *b*, lateral aspect.			
,, 21.	*Pleurostomella rapa*, Gümbel,	×	60	411
	a, Peripheral aspect; *b*, lateral aspect.			
,, 22, 23.	*Pleurostomella alternans*, Schwager,			412
	Fig. 22. *a*, Peripheral aspect; *b*, lateral aspect,	×	70	
	Fig. 23. *a*, Peripheral aspect; *b*, lateral aspect,	×	60	



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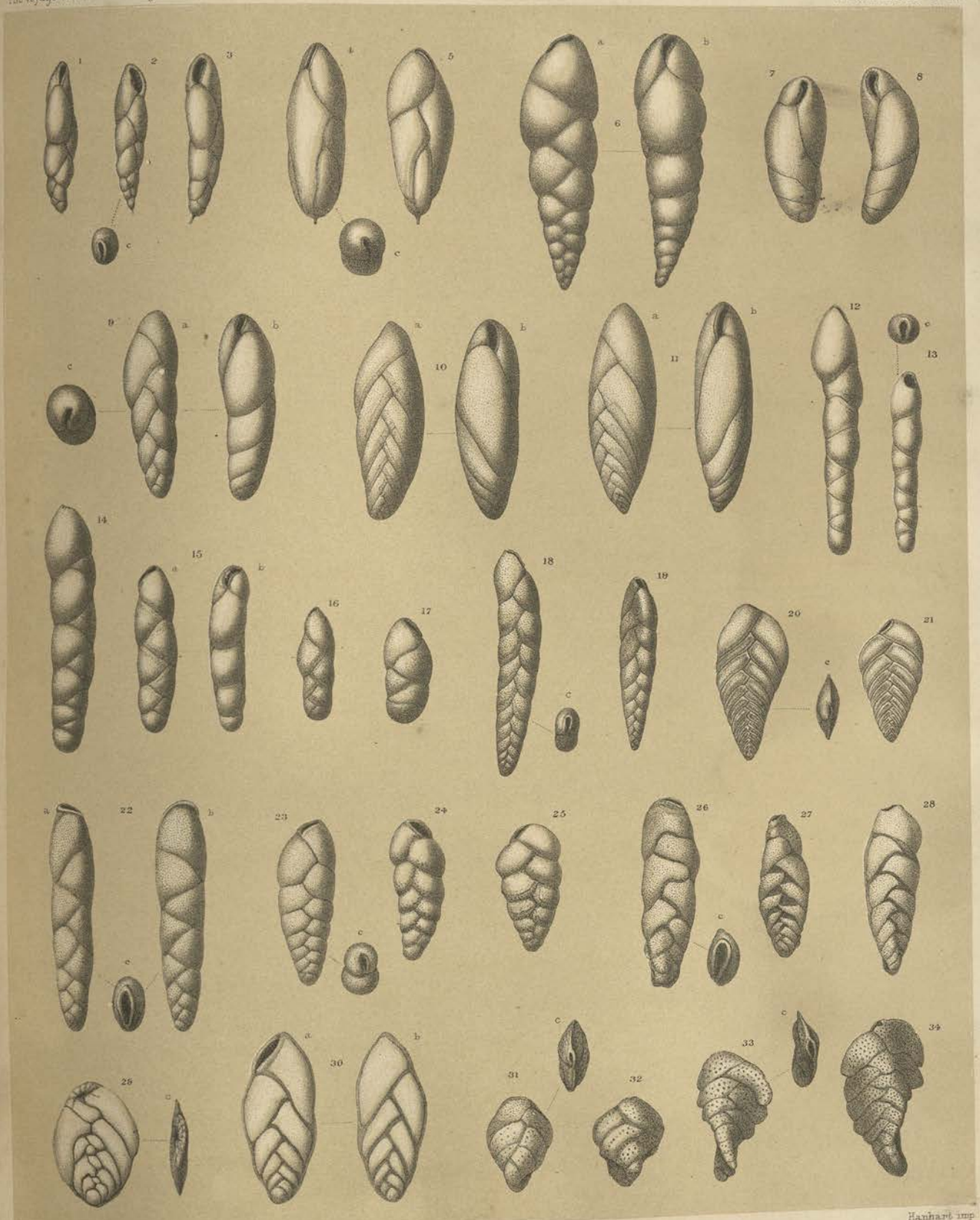
BULIMINA, (Bulimina_Pleurostomella).

PLATE LII.

PLATE LII.

VIRGULINA.—PLEUROSTOMELLA.—BOLIVINA.

		Diam.	Page
Figures 1–3.—	*Virgulina schreibersiana*, Czjzek, . .	× 70	414
	Figs. 1, 2, 3, Lateral aspects; *c*, oral aspect.		
,, 4, 5.—	*Virgulina paucilocula*ta, n. sp., . . .	× 80	414
	a, *b*, Lateral aspects; *c*, oral aspect.		
,, 6.—	*Virgulina texturata*, n. sp., . . .	× 40	415
	a, Lateral aspect; *b*, peripheral aspect.		
,, 7–11.—	*Virgulina subsquamosa*, Egger, ...		415
	Figs. 7–9. Various lateral aspects; *c*, oral aspect, .	× 50	
	Figs. 10, 11. Various lateral aspects, . .	× 70	
,, 12, 13.—	*Pleurostomella subnodosa*, Reuss, . .	× 50	412
	Figs. 12, 13. Lateral aspects; *c*, oral aspect.		
,, 14–17.—	*Virgulina subdepressa*, n. sp., . . .	× 40	416
	Various lateral aspects.		
,, 18, 19.—	*Bolivina punctata*, d'Orbigny, . . .	× 60	417
	Figs. 18, 19. Lateral aspect; *c*, oral aspect.		
,, 20, 21.—	*Bolivina dilatata*, Reuss, . . .	× 70	418
	Figs. 20, 21. Lateral aspect; *c*, oral aspect.		
,, 22.—	*Bolivina porrecta*, Brady, . . .	× 50	418
	a, *b*, Lateral aspects; *c*, oral aspect.		
,, 23–25.—	*Bolivina textilarioides*, Reuss, . . .	× 70	419
	Figs. 23, 24, 25. Lateral aspects; *c*, oral aspect.		
,, 26–28.—	*Bolivina limbata*, Brady, . . .	× 50	419
	Figs. 26, 27, 28. Lateral aspects; *c*, oral aspect.		
,, 29.—	*Bolivina tenuis*, Brady, ...	× 80	419
	Fig. 29. Lateral aspect; *c*, oral aspect.		
,, 30.—	*Bolivina nitida*, n. sp., ...	× 80	420
	Lateral aspects.		
,, 31–34.—	*Bolivina tortuosa*, Brady, . . .	× 70	420
	Figs. 31, 32, 33, 34. Lateral aspects; *c*, *c*, oral aspect.		



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BULIMINA, (Virgulina - Bolivina).

PLATE LIII.

PLATE LIII.

Bolivina.

		Diam.	Page
Figure 1.—*Bolivina beyrichi*, Reuss, Lateral aspect.	×	50	422
„ 2–4.—*Bolivina beyrichi*, var. *alata*, Seguenza,			422
Fig. 2. Lateral aspect,	×	50	
Figs. 3, 4. Lateral aspect; *b*, oral aspect,	×	60	
„ 5, 6.—*Bolivina pygmæa*, Brady, Figs. 5, 6. Lateral aspect; *b*, oral aspect.	×	60	421
„ 7–9.—*Bolivina robusta*, Brady, Figs. 7, 8, 9. Lateral aspects; *b*, oral aspect.	×	60	421
„ 10, 11.—*Bolivina ænariensis*, Costa, sp., Figs. 10, 11. Lateral aspect; *b*, oral aspect.	×	50	423
„ 12, 13.—*Bolivina decussata*, Brady, Figs. 12, 13. Lateral aspect; *b*, oral aspect.	×	60	423
„ 14, 15.—*Bolivina nobilis*, Hantken, Figs. 14, 15. Lateral aspect; *b*, oral aspect.	×	60	424
„ 16–18.—*Bolivina hantkeniana*, Brady,			424
Figs. 16, 17. Lateral aspect; *b*, oral aspect,	×	40	
Fig. 18. Lateral aspect,	×	60	
„ 19–21.—*Bolivina karreriana*, Brady, Figs. 19, 20, 21. Lateral aspects; *b*, oral aspect.	×	60	424
„ 22, 23.—*Bolivina lobata*, Brady, Figs. 22, 23. Lateral aspect; *b*, oral aspect.	×	80	425
„ 24, 25.—*Bolivina schwageriana*, Brady, Figs. 24, 25. Lateral aspect; *b*, oral aspect.	×	50	425
„ 26, 27.—*Bolivina costata*, d'Orbigny, Figs. 26, 27. Lateral aspect; *b*, oral aspect.	×	60	426
„ 28, 29.—*Bolivina amygdalæformis*, Brady, Figs. 28, 29. Lateral aspect; *b*, oral aspect.	×	50	426
„ 30, 31.—*Bolivina reticulata*, Hantken, Figs. 30, 31. Lateral aspect; *b*, oral aspect.	×	70	426
„ 32, 33.—*Bolivina subangularis*, Brady, Figs. 32, 33. Lateral aspect; *b*, oral aspect.	×	60	427

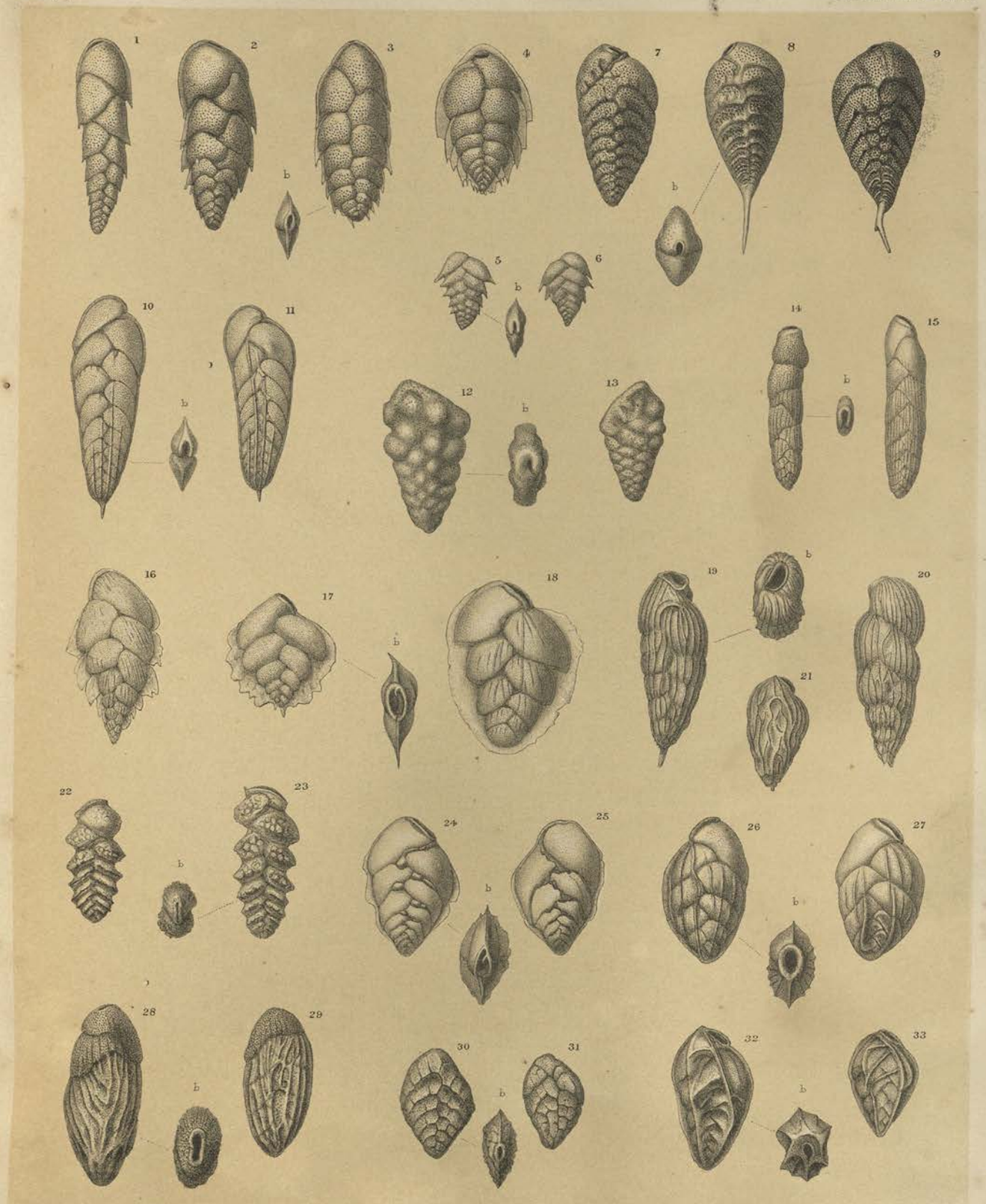
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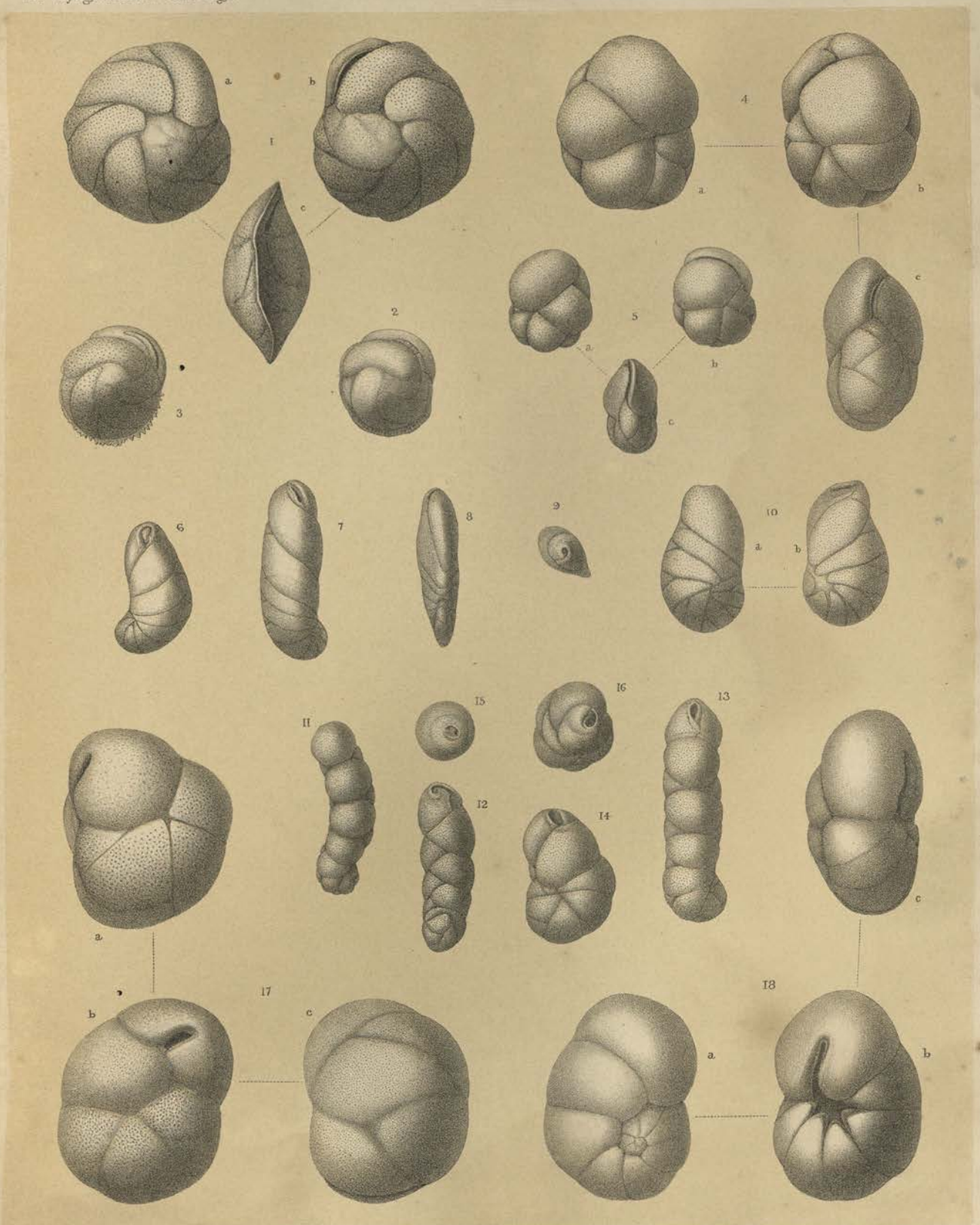
PLATE LIV.

PLATE LIV.

Cassidulina.—Bulimina.

		Diam.	Page
Figures 1–3.—*Cassidulina lævigata*, d'Orbigny, . . .	×	75	428
Fig. 1. *a*, Superior lateral aspect; *b*, inferior aspect; *c*, peripheral aspect.			
Fig. 2. Specimen with carinate margin.			
Fig. 3. Specimen with serrate keel.			
,, 4, 5.—*Cassidulina crassa*, d'Orbigny, ...			429
Fig. 4. *a*, Superior lateral aspect; *b*, inferior aspect; *c*, peripheral aspect, . . .	×	60	
Fig. 5. *a*, Superior lateral aspect; *b*, inferior aspect; *c*, peripheral aspect, . . .	×	75	
,, 6–10.—*Cassidulina bradyi*, Norman, . . .	×	75	431
Fig. 10. *a*, Superior lateral aspect; figs. 6, 7, 10 *b*, inferior aspect; fig. 8, peripheral aspect; fig. 9, oral aspect.			
,, 11–16.—*Cassidulina parkeriana*, Brady, . . .	×	75	432
Figs. 11–14. Lateral aspects; figs. 15, 16, oral aspects.			
,, 17.—*Cassidulina subglobosa*, Brady, . . .	×	60	430
a, Lateral aspect; *b*, *c*, ventral and dorsal peripheral aspects.			
,, 18.—*Bulimina contraria*, Reuss, sp., . . .	×	60	409
a, Superior lateral aspect; *b*, inferior aspect; *c*, peripheral aspect.			



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CASSIDULINA

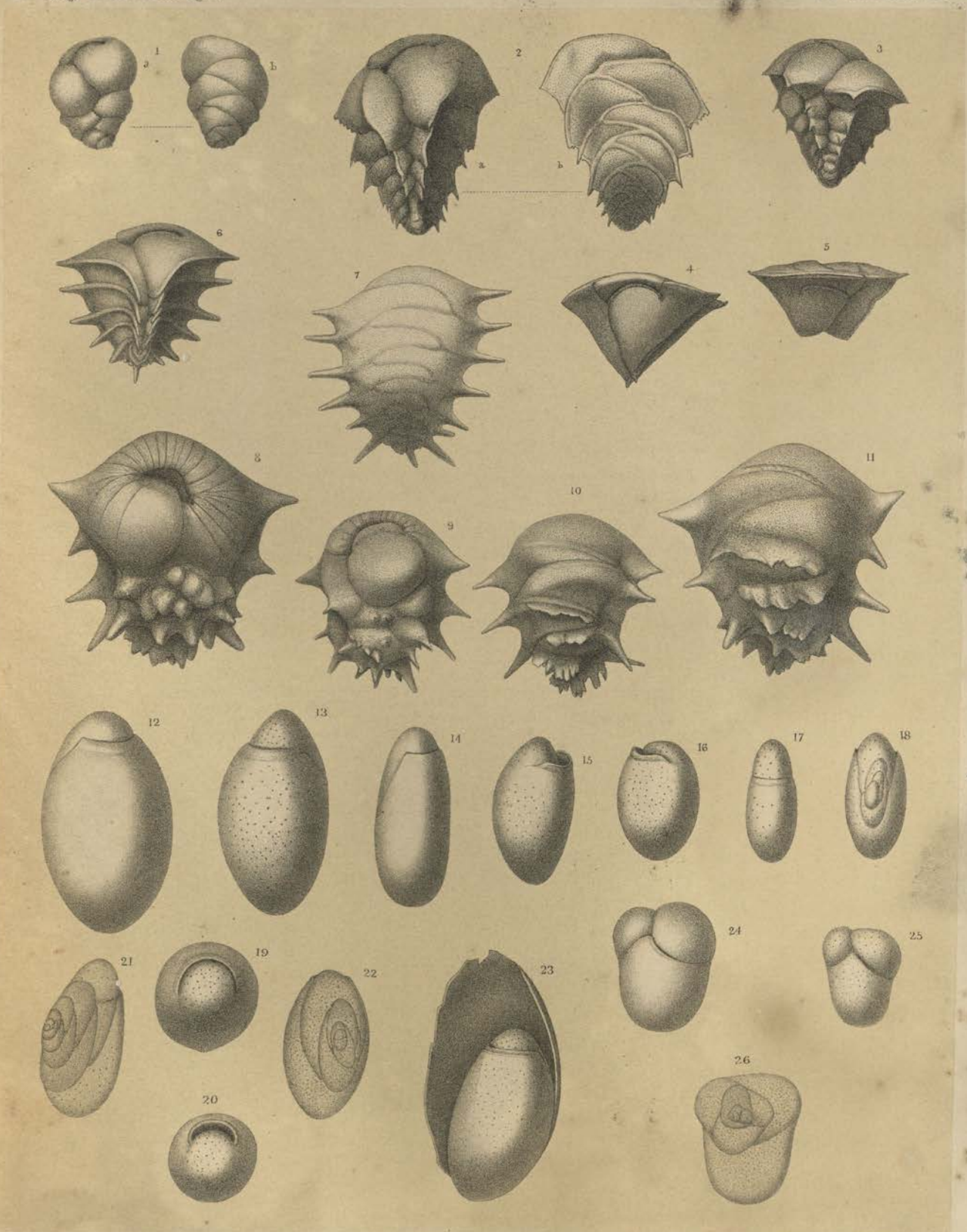
Hanhart imp

PLATE LV.

PLATE LV.

EHRENBERGINA.—CHILOSTOMELLA.—ALLOMORPHINA.

		Diam.	Page
Figure 1.—*Ehrenbergina pupa*, d'Orbigny, sp.,		× 75	433
a, Ventral lateral aspect; *b*, dorsal aspect.			
„ 2–7.—*Ehrenbergina serrata*, Reuss,			434
Figs. 2 *a*, 6. Ventral lateral aspects; figs. 2 *b*, 7, dorsal aspects,		× 60	
Fig. 3. Ventral aspect; figs. 4, 5, oral aspects,		× 75	
„ 8–11.—*Ehrenbergina hystrix*, Brady,		× 60	434
Figs. 8, 9. Ventral aspect; figs. 10, 11, dorsal aspect.			
„ 12–23.—*Chilostomella ovoidea*, Reuss,			436
Figs. 12–18. Lateral aspects; figs. 19, 20, oral aspects,		× 50	
Figs. 21, 22. Small specimens mounted in Canada balsam and viewed by transmitted light, showing the arrangement of the chambers,		× 70	
Fig. 23. Specimen with part of the wall of the final segment removed,		× 50	
„ 24–26.—*Allomorphina trigonula*, Reuss,			438
Figs. 24, 25. Lateral aspects,		× 60	
Fig. 26. Specimen mounted in Canada balsam and viewed by transmitted light, showing the arrangement of the chambers,		× 100	



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EHRENBERGINA – CHILOSTOMELLA – ALLOMORPHINA.

Hanhart imp.

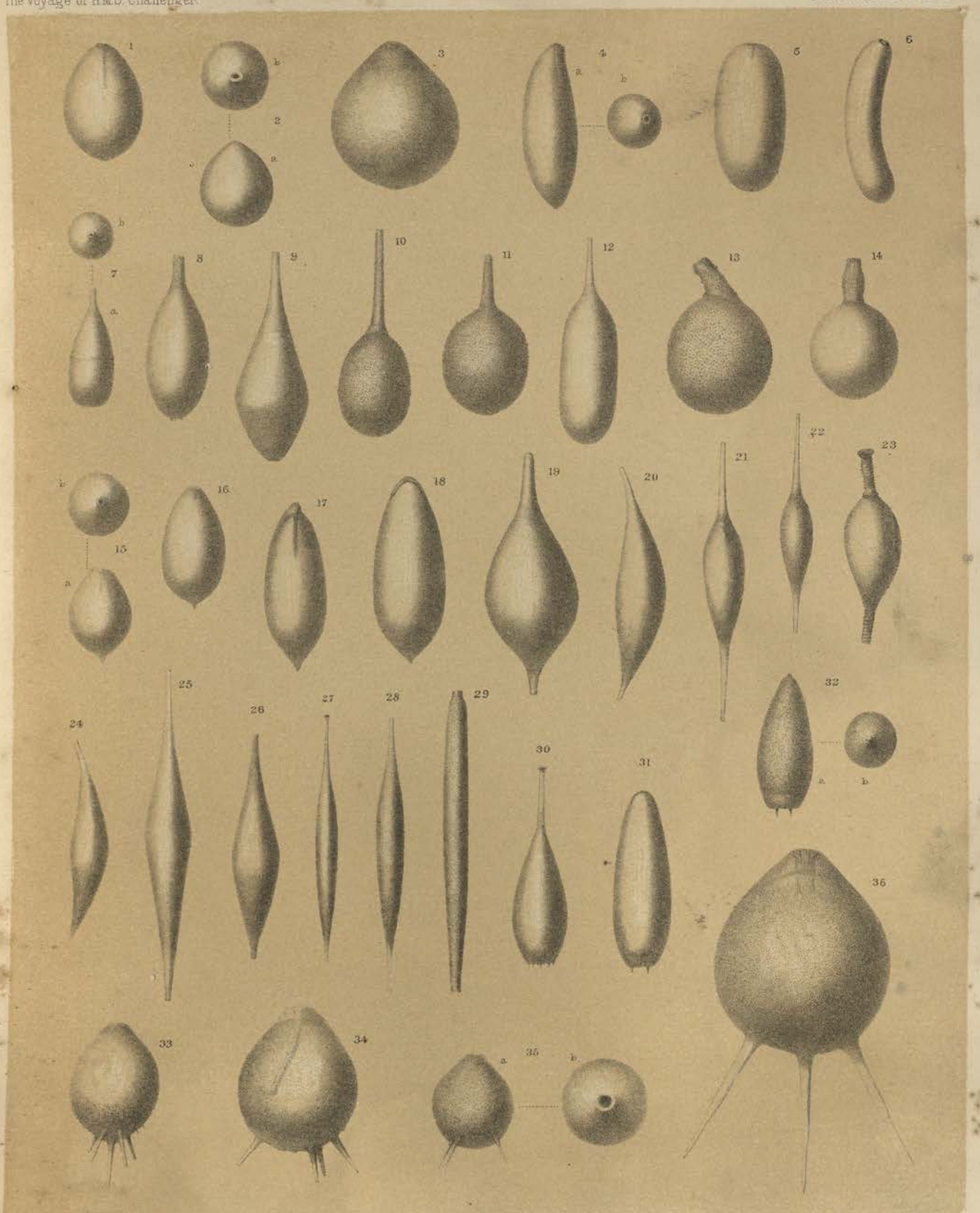
PLATE LVI.

PLATE LVI.

Lagena.

(*a*, Lateral aspect ; *b*, oral aspect.)

		Diam.	Page
Figures 1–3.	—*Lagena globosa*, Montagu, sp., . . .	× 60–75	452
,, 4.	—*Lagena apiculata*, Reuss, sp., . . .	× 75	453
,, 5.	—*Lagena ovum*, Ehrenberg, sp., . . .	× 75	454
,, 6.	—*Lagena botelliformis*, Brady, . . .	× 75	454
,, 7–14.	—*Lagena lævis*, Montagu, sp., . . .	× 75	455
,, 15–18.	—*Lagena apiculata*, Reuss, sp., . . .	× 75	453
,, 19–28.	—*Lagena gracillima*, Seguenza, sp., . .	× 60	456
,, 29.	—*Lagena elongata*, Ehrenberg, sp., . .	× 60	457
,, 30.	—*Lagena lævis*, Montagu, sp. (var.), . .	× 75	455
,, 31, 32.	—*Lagena truncata*, n. sp., . . .	× 75	457
,, 33–36.	—*Lagena longispina*, Brady, globular form, . . .		454
	Figs. 33–35. ×75 ;—fig. 36, . . .	× 50	



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LAGENA.

Hanhart imp.

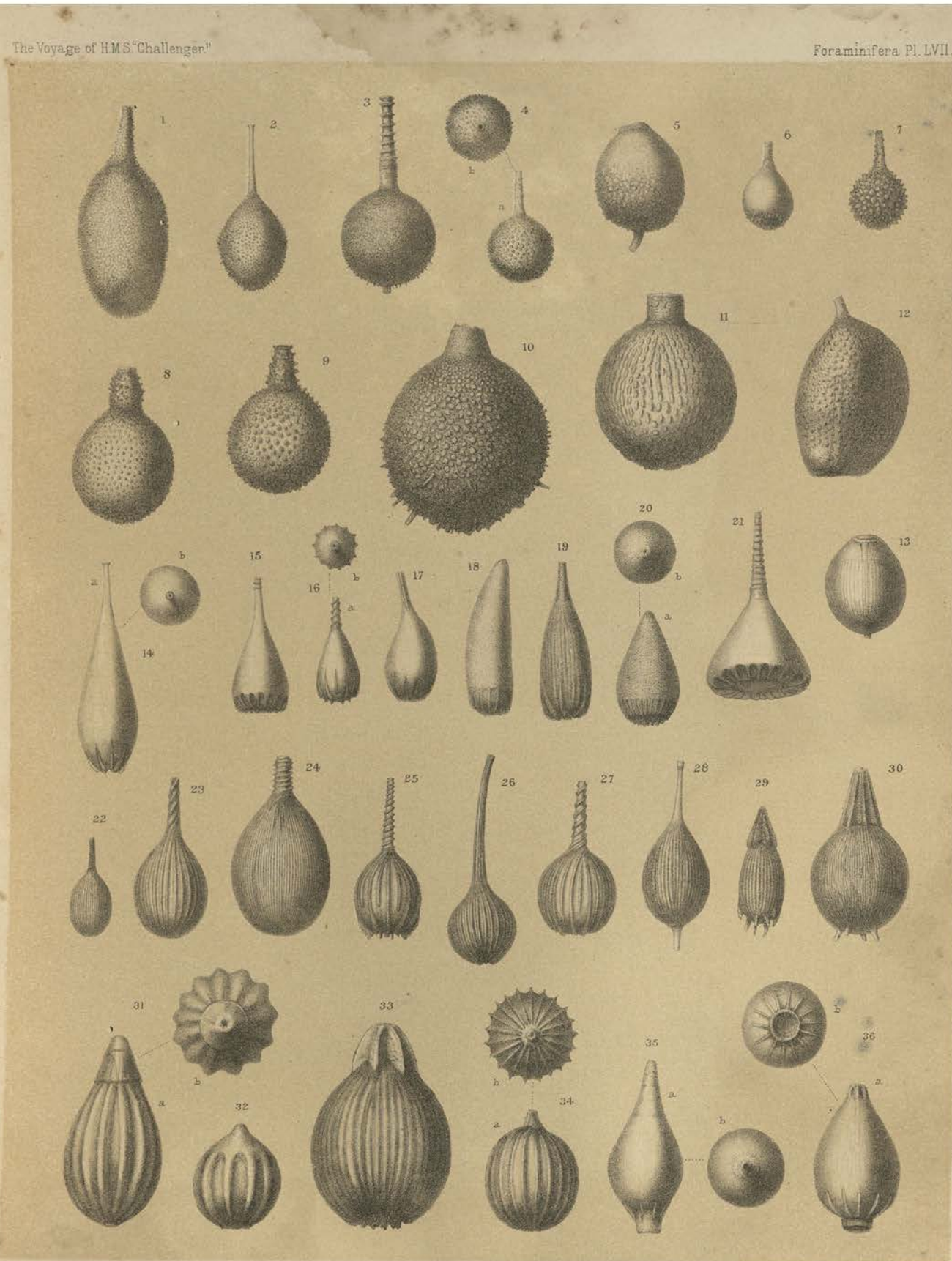
PLATE LVII.

PLATE LVII.

LAGENA.

(*a*, Lateral aspect; *b*, oral aspect.)

		Diam.	Page
Figures 1–4.—*Lagena hispida*, Reuss,	×	60	459
„ 5.—*Lagena ampulla-distoma*, Rymer Jones,	×	60	458
„ 6 (?) 7–12.—*Lagena aspera*, Reuss,			457
Figs. 6, 7. ×75; figs. 8, 9,	×	60	
Figs. 10, 11,	×	45	
Fig. 12. Compressed ecto-ento-solenian specimen,	×	60	
„ 13.—*Lagena lineata*, Williamson, sp.,	×	60	461
„ 14, 16, 17, (and 18 ?).—*Lagena semistriata*, Williamson,	×	75	465
„ 15, 21.—*Lagena crenata*, Parker and Jones,	×	75	467
„ 20.—Intermediate form, resembling *Lagena crenata* and *Lagena semistriata*,	×	75	465
„ 19, 22, 24, 28, 29, 30.—*Lagena striata*, d'Orbigny, sp.,	×	60	460
„ 23, 26, 33, 34.—*Lagena sulcata*, Walker and Jacob,	×	60	462
„ 25, 27.—*Lagena sulcata*, var. *interrupta*, Williamson,	×	60	463
„ 31, 32.—*Lagena acuticosta*, Reuss,	×	60–75	464
„ 35, 36.—*Lagena stelligera*, Brady,	×	75	466



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LAGENA.

Hanhart imp.

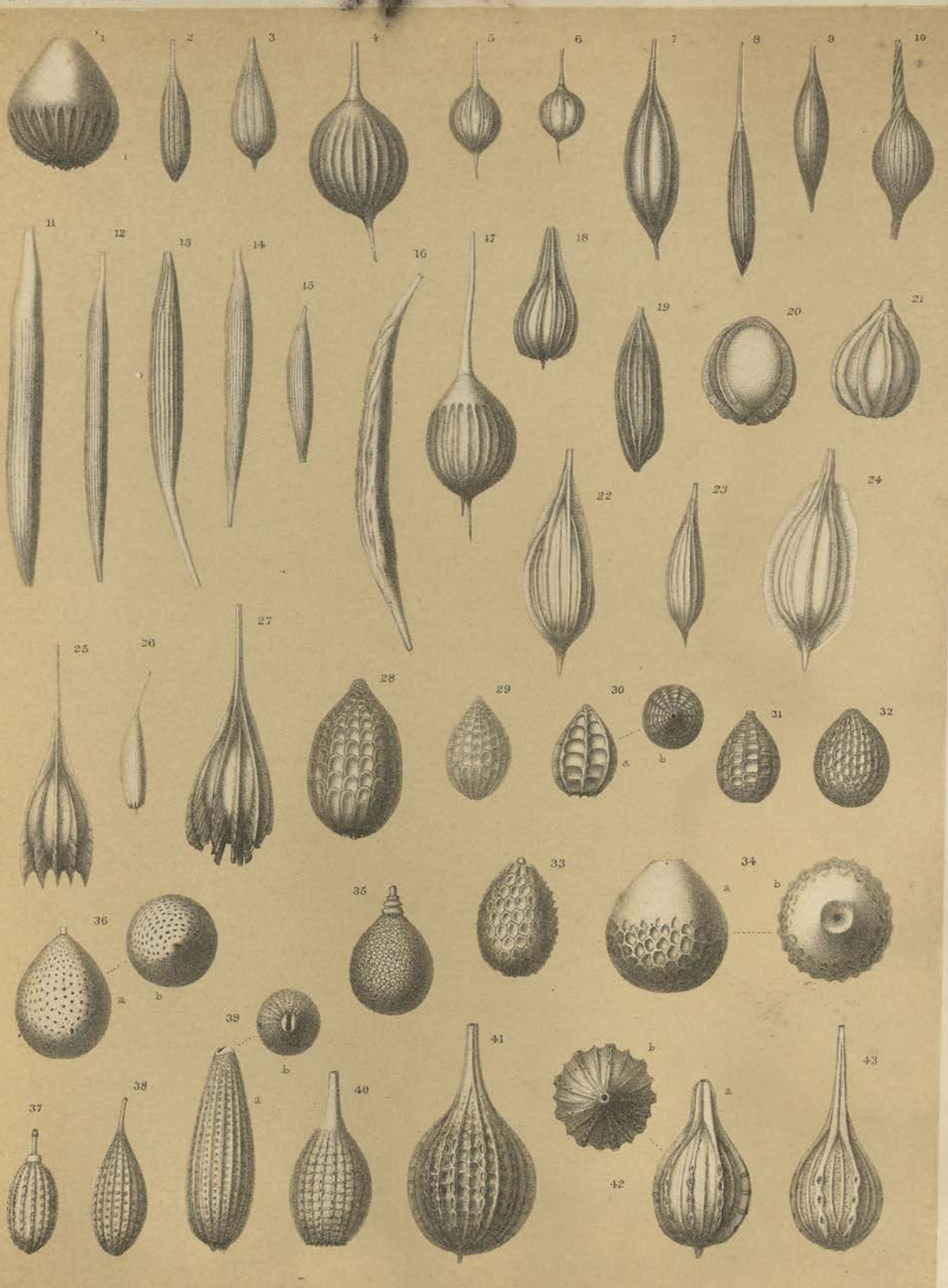
PLATE LVIII.

PLATE LVIII.

LAGENA.

(*a*, Lateral aspect; *b*, oral aspect.)

		Diam.	Page
Figure 1.—*Lagena exsculpta*, Brady, ...	×	75	467
„ 2, 3, 7–10.—*Lagena gracilis*, Williamson, . . .	×	75	464
„ 4, 17 (?), 18.—Apiculate forms of *Lagena sulcata*, Walker and Jacob, ...	×	75	462
„ 5, 6.—Apiculate form of *Lagena sulcata*, var. *interrupta*, Williamson, ...	×	75	463
„ 11–15.—*Lagena distoma*, Parker and Jones, . .	×	45–60	461
„ 16.—*Lagena distoma-margaritifera*, Parker and Jones, .	×	40	458
„ 19, 22–24.—*Lagena gracilis*, Williamson, . . .	×	75	464
„ 20 (?), 21.—*Lagena acuticosta*, Reuss, . . .	×	75	464
„ 25, 26 (?), 27.—*Lagena plumigera*, Brady, . .	×	75	465
„ 28–31.—*Lagena squamosa*, Montagu, sp., . .	×	75	471
„ 32, 33.—*Lagena hexagona*, Williamson, sp., . .	×	75	472
„ 34.—*Lagena seminuda*, n. sp., . . .	×	60	472
„ 35.—*Lagena favoso-punctata*, Brady, . . .	×	75	473
„ 36.—*Lagena hertwigiana*, Brady, . . .	×	75	470
„ 37, 40.—*Lagena striatopunctata*, Parker and Jones, .	×	75	468
„ 38, 39.—*Lagena feildeniana*, Brady, . . .	×	75	469
„ 41.—*Lagena torquata*, Brady, . . .	×	75	469
„ 42, 43.—*Lagena desmophora*, Rymer Jones, . .	×	75	468



A.T. Hollick ad nat. del. et lith.

LAGENA.

Hanhart imp.

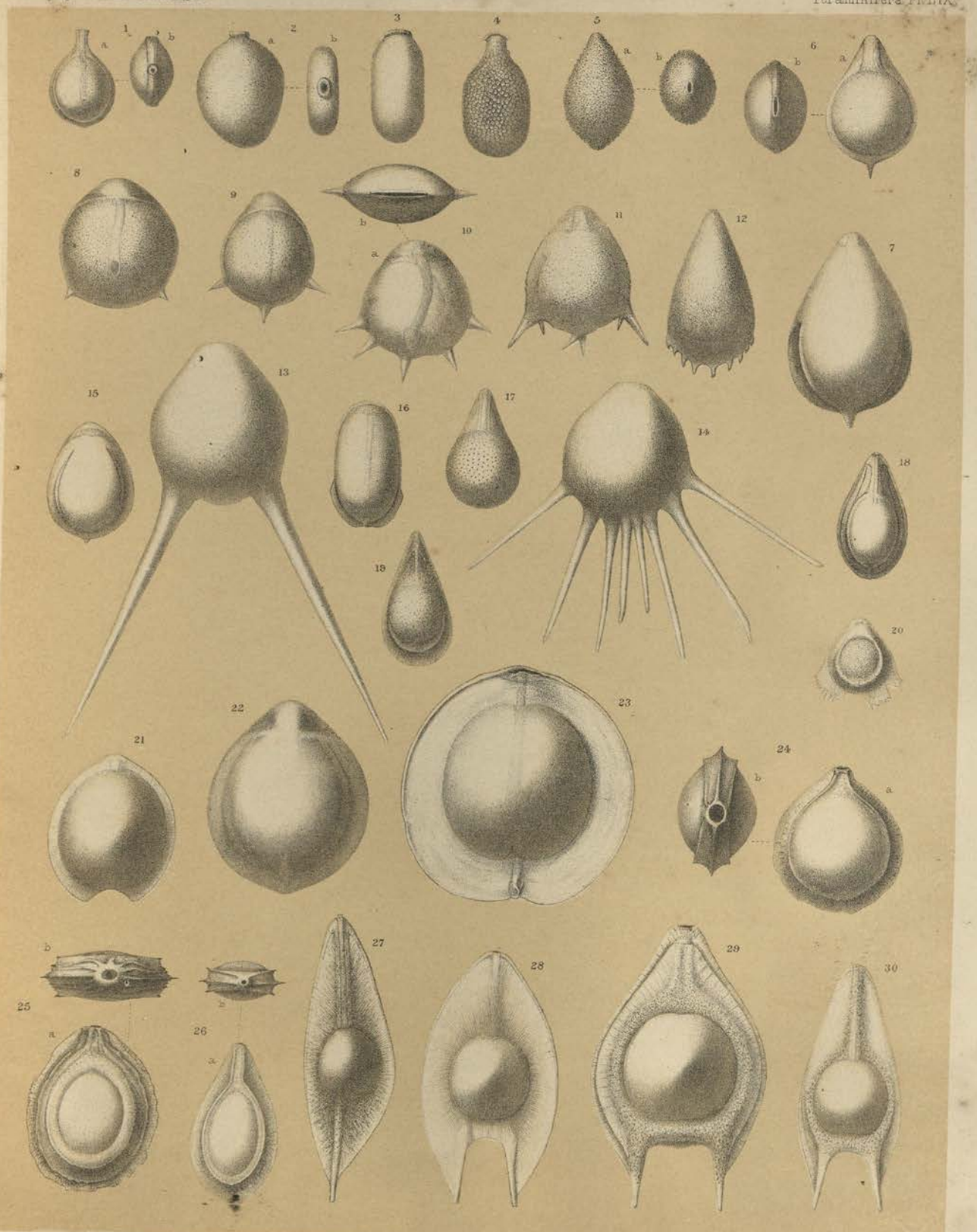
PLATE LIX.

PLATE LIX.

Lagena.

(*a*, Lateral aspect ; *b*, oral aspect.)

			Diam.	Page
Figure 1.	—*Lagena orbignyana*, Seguenza, sp., . . .	×	75	484
„ 2, 5.	—*Lagena hispida*, Reuss, compressed variety, .	×	75	459
	Much worn specimens.			
„ 3.	—*Lagena quadrata*, Williamson, sp., . . .	×	75	475
„ 4.	—*Lagena favoso-punctata*, Brady ; compressed form	×	75	473
„ 6.	—*Lagena acuta*, Reuss, sp. (not typical), . . .	×	60	474
„ 7.	—*Lagena quadricostulata*, Reuss (?), . .	×	60	486
„ 8–11.	—*Lagena staphyllearea*, Schwager, sp.			474
	Fig. 8. × 45 diameters ; figs. 9–11, . .	×	75	
„ 12.	—*Lagena unguiculata*, Brady, . . .	×	60	474
„ 13, 14.	—*Lagena longispina*, Brady ; compressed variety, .	×	30	454
	Fig. 13. The spines of this specimen are hollow.			
„ 15.	—*Lagena quadricostulata*, Reuss, . . .	×	75	486
„ 16.	—*Lagena quadrata*, Williamson sp., . .	×	75	475
	Partially carinate specimen.			
„ 17, 19.	—*Lagena marginata*, var. *semimarginata*, Reuss,	×	60–75	477
„ 18, 20.	—*Lagena orbignyana*, Seguenza, sp., varieties, .	×	75–90	484
„ 21–23.	—*Lagena marginata*, Walker and Boys.			476
	Fig. 21. × 45 ; fig. 22, × 40 ; fig. 23, . .	×	25	
„ 24–26.	—*Lagena orbignyana*, Seguenza, sp.			484
	Fig. 24. × 45 ; fig. 25, × 30 ; fig. 26, . .	×	60	
„ 27.	—*Lagena siliqua*, Rymer Jones, . . .	×	45	478
„ 28–30.	—*Lagena seminiformis*, Schwager, . . .	×	45–60	478



A.T.Hollick ad nat. del. et lith.

LAGENA.

Hanhart imp.

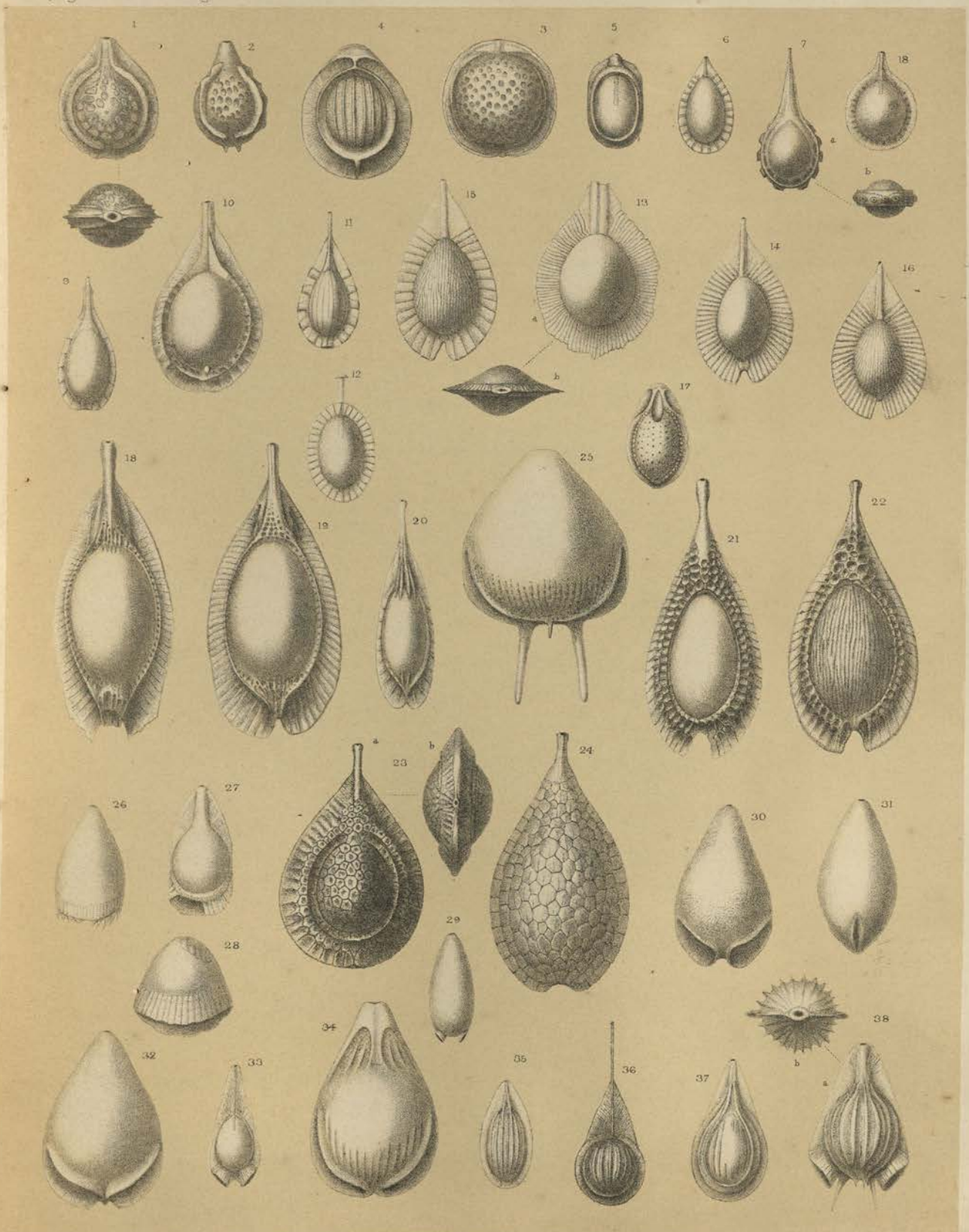
PLATE LX.

PLATE LX.

LAGENA.

(*a*, Lateral aspect; *b*, oral aspect.)

			Diam.	Page
Figures 1, 2, 3 (?).—*Lagena castrensis*, Schwager,		×	75	485
„ 4.—*Lagena clathrata*, n. sp.,		×	75	485
„ 5.—*Lagena quadrata*, Williamson, sp. (variety),		×	75	475
„ 6, 7, 9, 12–14.—*Lagena lagenoides*, Williamson, sp.,		×	60–75	479
„ 11, 15, 16.—*Lagena lagenoides*, var. *tenuistriata*, nov.,		×	60–75	479
„ 8 (?), 10, 17 (?), 18–20.—*Lagena formosa*, Schwager. Fig. 8. × 75; figs. 10, 20, × 60; fig. 17, × 90; figs. 18, 19,		×	50	480
„ 21.—*Lagena formosa*, var. *favosa*, Brady,		×	60	480
„ 22.—*Lagena formosa*, var. *comata*, Brady,		×	75	480
„ 23.—*Lagena squamoso-alata*, Brady,		×	60	481
„ 24.—*Lagena squamoso-marginata*, Parker and Jones,		×	60	481
„ 25.—*Lagena alveolata*, var. *caudigera*, Brady,		×	40	488
„ 26–28.—*Lagena fimbriata*, Brady,		×	60	486
„ 29, 31 (?), 33.—*Lagena auriculata*, Brady,		×	60	487
„ 30, 32.—*Lagena alveolata*, n. sp.,		×	60	487
„ 34.—*Lagena alveolata*, var. *substriata*, Brady,		×	60	488
„ 35–37.—Winged varieties of *Lagena sulcata*, Walker and Jacob,		×	75	462
„ 38.—*Lagena auriculata*, var. *costata*, Brady,		×	60	487



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LAGENA.

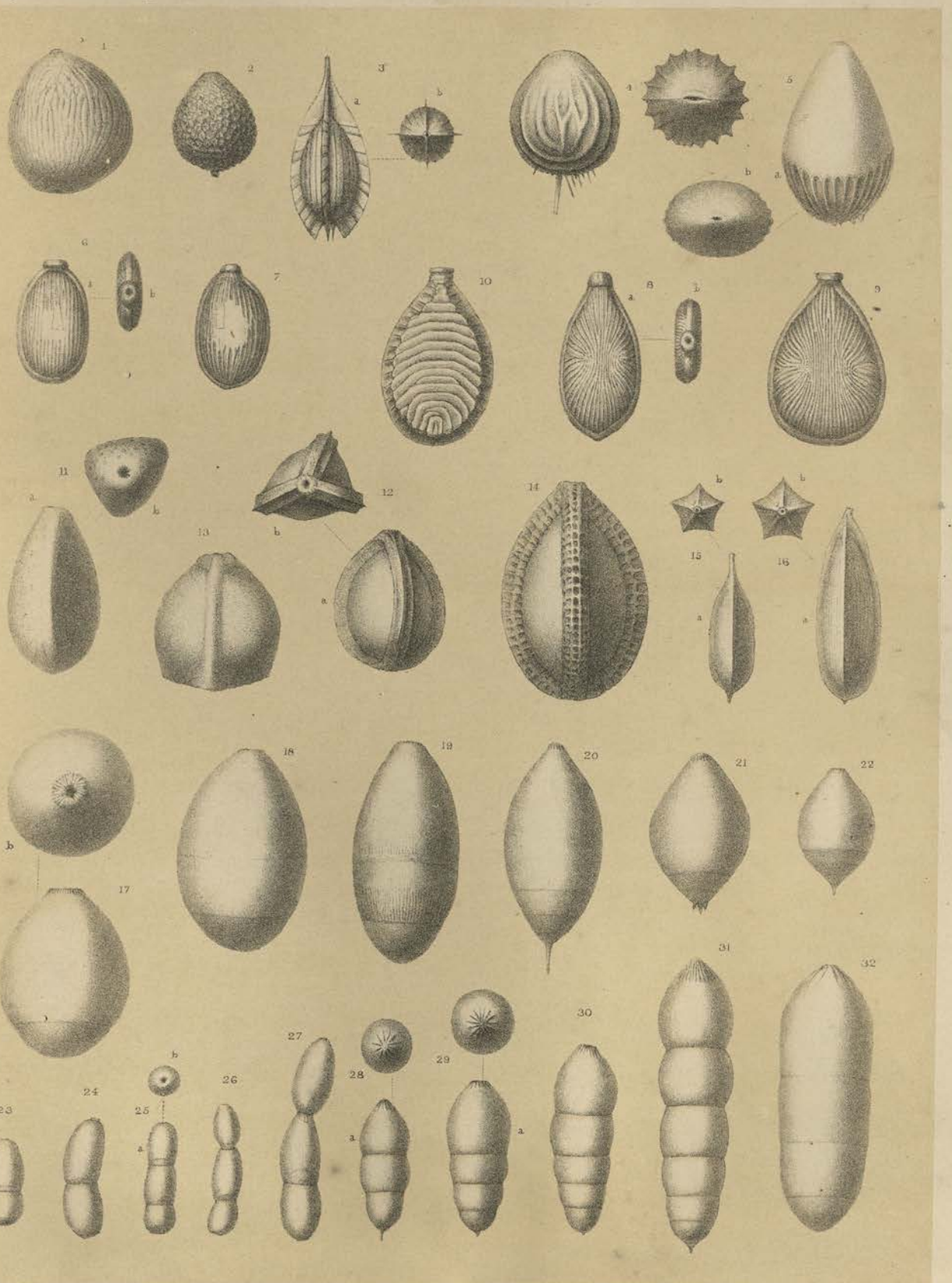
PLATE LXI.

PLATE LXI.

LAGENA.—NODOSARIA.

(*a*, Lateral aspect ; *b*, oral aspect.)

			Diam.	Page
Figure	1.—*Lagena variata*, Brady, ...	×	75	461
,,	2.—*Lagena favoso-punctata*, Brady, . . .	×	100	473
,,	3.—*Lagena quadralata*, Brady, . . .	×	100	464
,,	4.—*Lagena multicosta*, Karrer, sp., . . .	×	75	466
,,	5.—*Lagena exsculpta*, Brady ; compressed form, .	×	75	467
,,	6, 7.—*Lagena wrightiana*, Brady, . . .	×	90	482
,,	8, 9.—*Lagena radiato-marginata*, Parker and Jones, .	×	90	481
,,	10.—*Lagena schulzeana*, Brady, . . .	×	90	482
,,	11.—*Lagena trigono-oblonga*, Seguenza and Siddall, .	×	75	475
,,	12, 13.—*Lagena trigono-marginata*, Parker and Jones, .	×	100	482
,,	14.—*Lagena trigono-ornata*, Brady, . . .	×	60	483
,,	15, 16.—*Lagena quinquelatera*, Brady, . . .	×	100	484
,,	17–19.—*Nodosaria* (*Glandulina*), *rotundata*, Reuss, .	×	30	491
,,	20–22.—*Nodosaria* (*Glandulina*), *lævigata*, d'Orbigny, .	×	30	490
,,	23–27.—*Nodosaria calomorpha*, Reuss, . . .	×	50	497
,,	28–31.—*Nodosaria radicula*, Linné, sp., . .	×	30	495
,,	32.—*Nodosaria* (*Glandulina*), *æqualis*, Reuss, sp., .	×	30	492



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LAGENA_NODOSARIA.

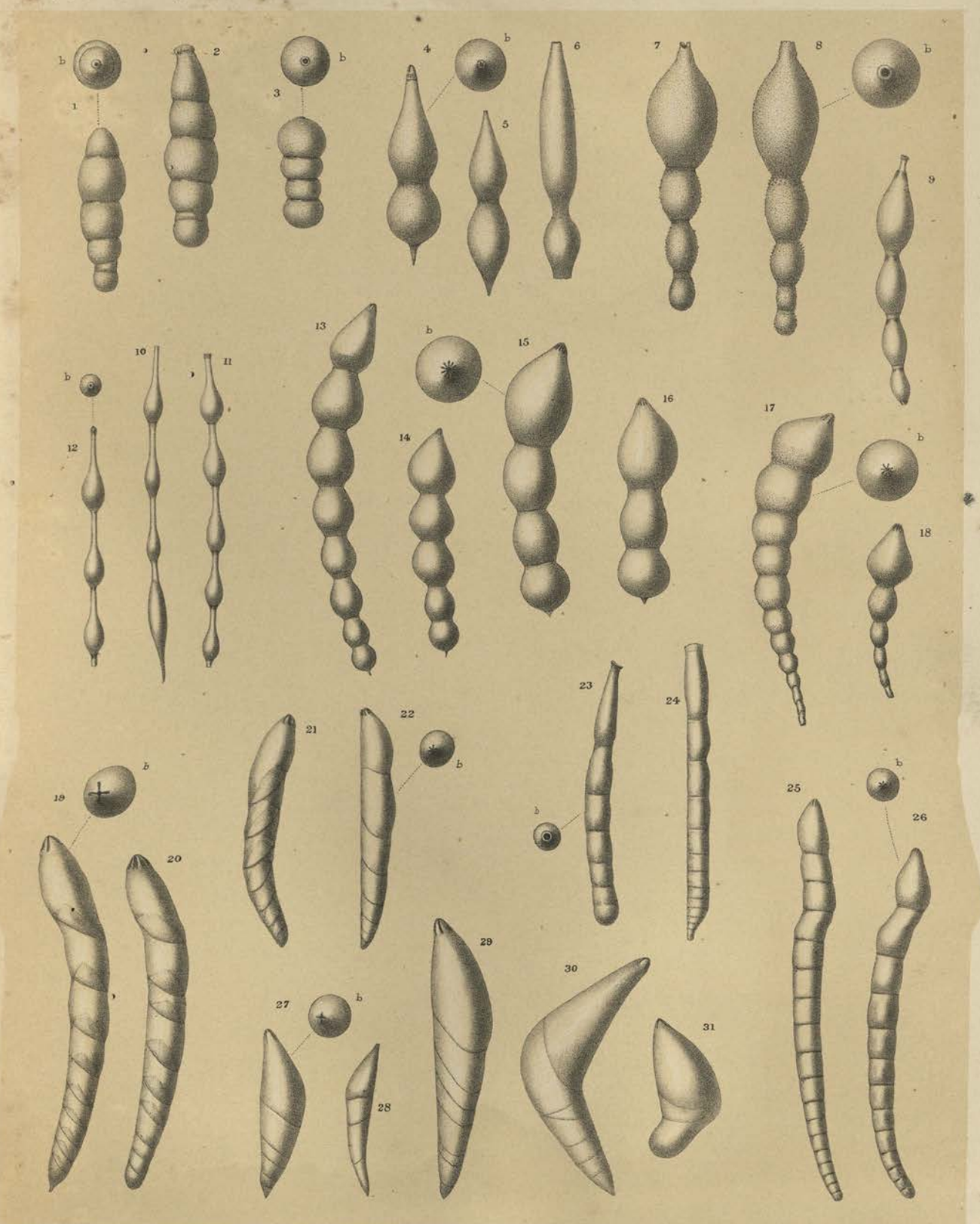
PLATE LXII.

PLATE LXII.

Nodosaria.

(*b*, Oral aspect.)

		Diam.	Page
Figures 1, 2.—*Nodosaria radicula*, var. *annulata*, Terquem and Berthelin,	×	50	496
„ 3.—*Nodosaria radicula*, var. *ambigua*, Neugeboren,	×	50	496
„ 4, 5 (and 6 ?).—*Nodosaria simplex*, Silvestri,	×	35–50	496
„ 7, 8.—*Nodosaria subtertenuata*, Schwager,	×	50	507
„ 9.—*Nodosaria inflexa*, Reuss,	×	30	498
„ 10–12.—*Nodosaria pyrula*, d'Orbigny,	×	30–40	497
„ 13–16.—*Nodosaria soluta*, Reuss,	×	12	503
„ 17, 18.—*Nodosaria farcimen*, Soldani, sp. (not typical; see woodcuts, p. 499).	×	15	498
„ 19–22.—*Nodosaria communis*, d'Orbigny,	×	35–50	504
„ 23, 24.—*Nodosaria consobrina*, d'Orbigny, sp.,	×	50	501
„ 25, 26.—*Nodosaria consobrina*, var. *emaciata*, Reuss,	×	15	502
„ 27–29.—*Nodosaria mucronata*, Neugeboren, sp.,	×	50	506
„ 30, 31.—Monstrous specimens of the same,	×	40	



A.T.Hollick ad nat. del. et lith.

NODOSARIA.

Hanhart imp.

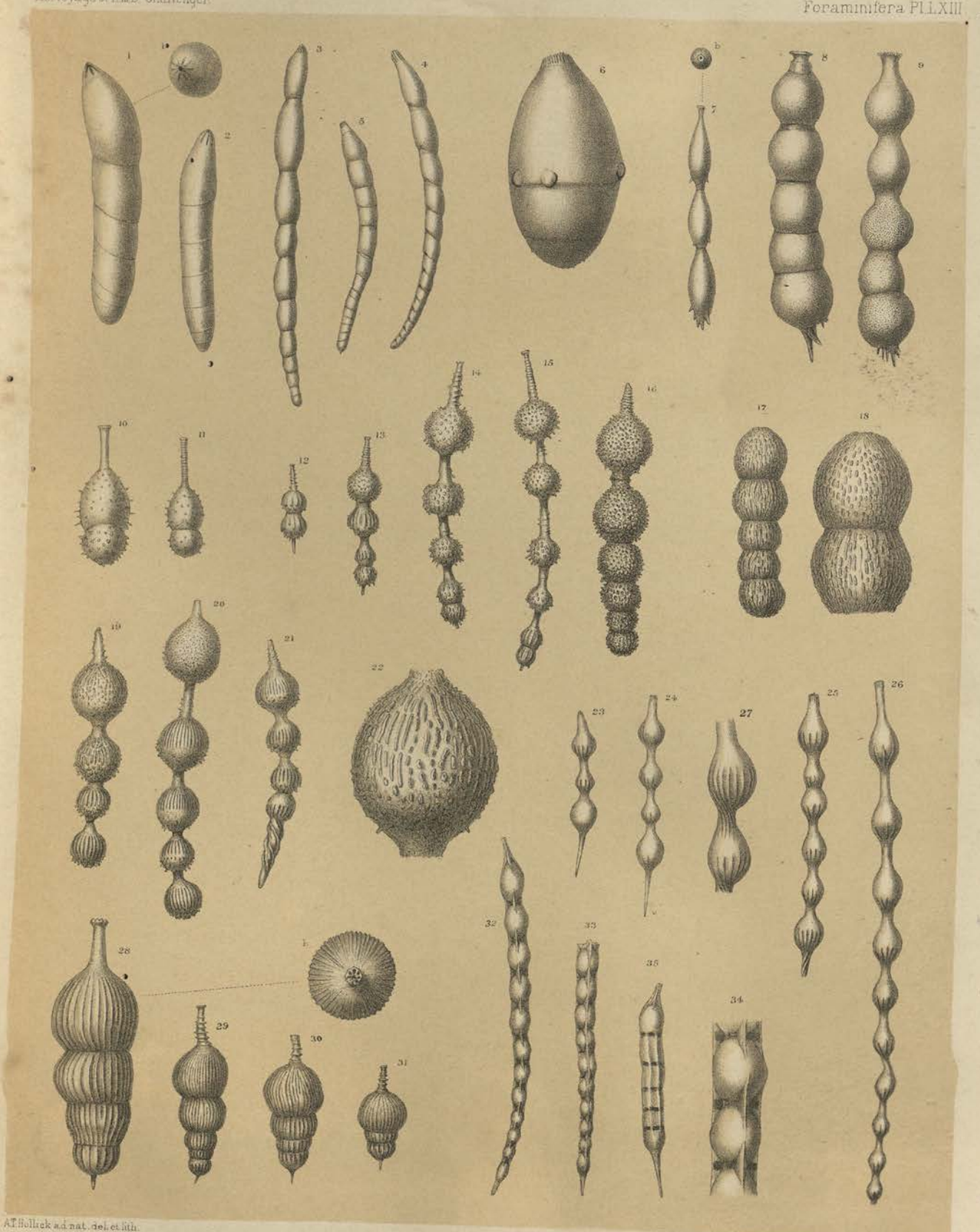
PLATE LXIII.

PLATE LXIII.

NODOSARIA.

(*b*, Oral aspect.)

		Diam.	Page
Figure 1.—*Nodosaria roemeri*, Neugeboren, sp., . .	× 20		505
„ 2.—*Nodosaria plebeia*, Reuss, ...	× 20		502
„ 3–5.—*Nodosaria filiformis*, d'Orbigny, sp., . . .			500
Figs. 3. × 10; figs. 4, 5, . . .	× 20		
„ 6.—*Nodosaria* (*Glandulina*) *armata*, Reuss, . .	× 50		494
„ 7.—*Nodosaria retrorsa*, Reuss, sp., . . .	× 50		507
„ 8, 9.—*Nodosaria* (?) *abyssorum*, Brady, . . .	× 20		504
„ 10, 11.—Young or arrested specimens of *Nodosaria hispida*, d'Orbigny, or *Nodosaria setosa*, Schwager. (*Nodosaria papillosa*, Silvestri ?) . .	× 75		508
„ 12–16.—*Nodosaria hispida*, d'Orbigny, ...			507
Fig. 12. × 45; figs. 13, 14, × 30; figs. 15, 16,	× 25		
„ 17.—*Nodosaria verruculosa*, Neugeboren, . .	× 50		509
„ 18.—A portion of the shell more highly magnified, .	× 100		
„ 19–21.—*Nodosaria hispida*, var. *sublineata*, nov., .	× 35		508
„ 22.—A portion of the shell more highly magnified, .	× 100		
„ 23–26.—*Nodosaria costulata*, Reuss, . . .	× 15		515
„ 27.—A portion of the shell more highly magnified, .	× 30		
„ 28–31.—*Nodosaria scalaris*, Batsch, sp., . . .	× 45–50		510
„ 32–33.—*Nodosaria catenulata*, n. sp., . . .	× 40		515
„ 34.—A portion of the shell more highly magnified, .	× 100		
„ 35.—*Nodosaria vertebralis*, Batsch, sp., . .	× 40		514



A.T. Hollick ad nat. del. et lith.

NODOSARIA.

Hanhart imp.

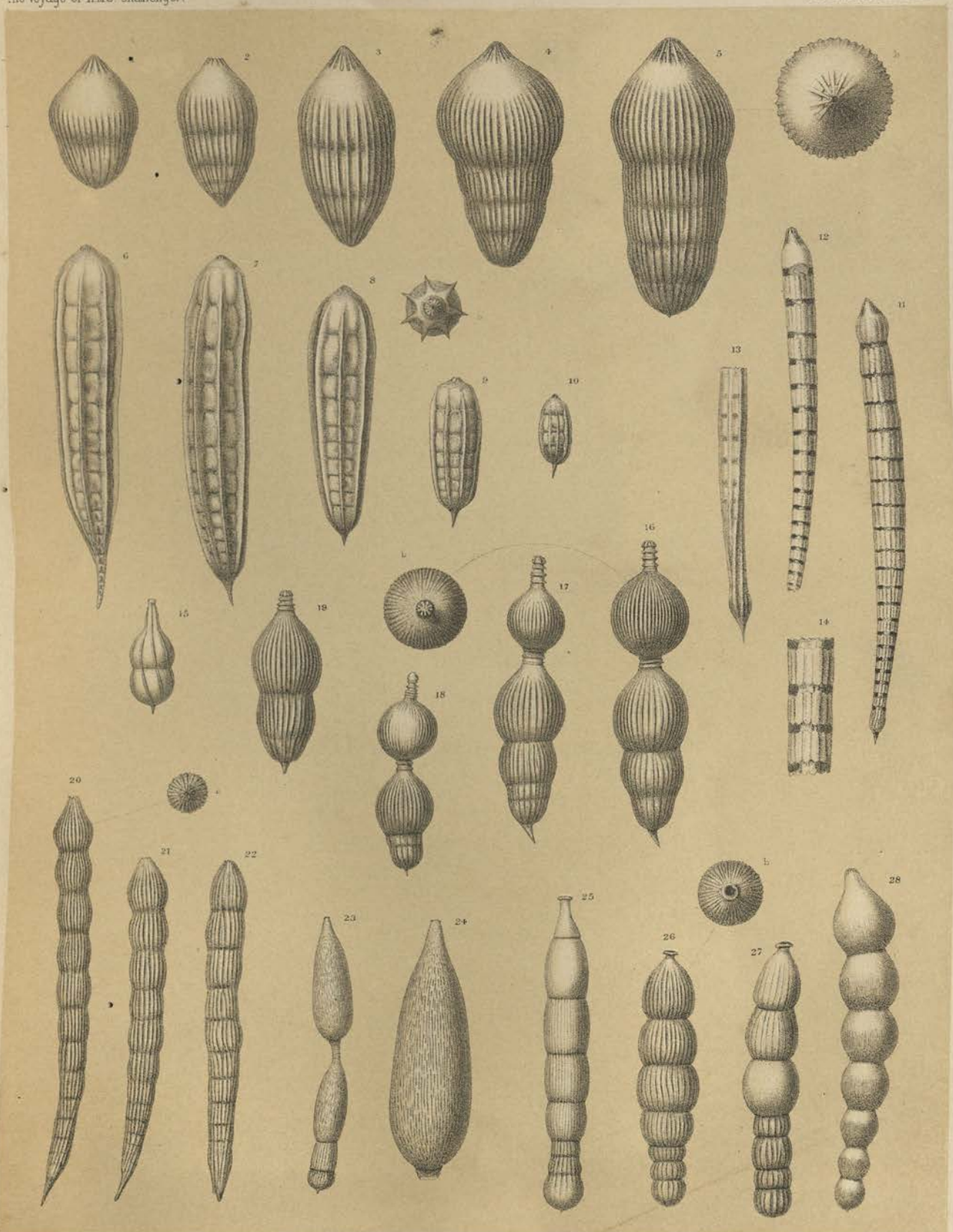
PLATE LXIV.

PLATE LXIV.

Nodosaria.

(*b*, Oral aspect.)

		Diam.	Page
Figures 1–5.—*Nodosaria comata*, Batsch, sp., Specimens in various stages of growth.	×	50	509
„ 6–10.—*Nodosaria raphanus*, Linné, sp.,	×	15	512
„ 11–13.—*Nodosaria vertebralis*, Batsch, sp.,	×	15–18	514
„ 14.—A portion of a specimen more highly magnified,	×	30	
„ 15.—*Nodosaria proxima*, Silvestri,	×	60	511
„ 16–19.—*Nodosaria scalaris*, var. *separans*, nov.,	×	40	511
„ 20–22.—*Nodosaria obliqua*, Linné, sp.,	×	16	513
„ 23.—*Nodosaria subcanaliculata*, Neugeboren (var.),	×	40	512
„ 24.—A portion of the same more highly magnified,	×	80	
„ 25–27.—*Nodosaria perversa*, Schwager,	×	50–60	512
„ 28.—*Nodosaria soluta*, Reuss,—faintly striate specimen,	×	15	503



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Hanhart. imp

NODOSARIA.

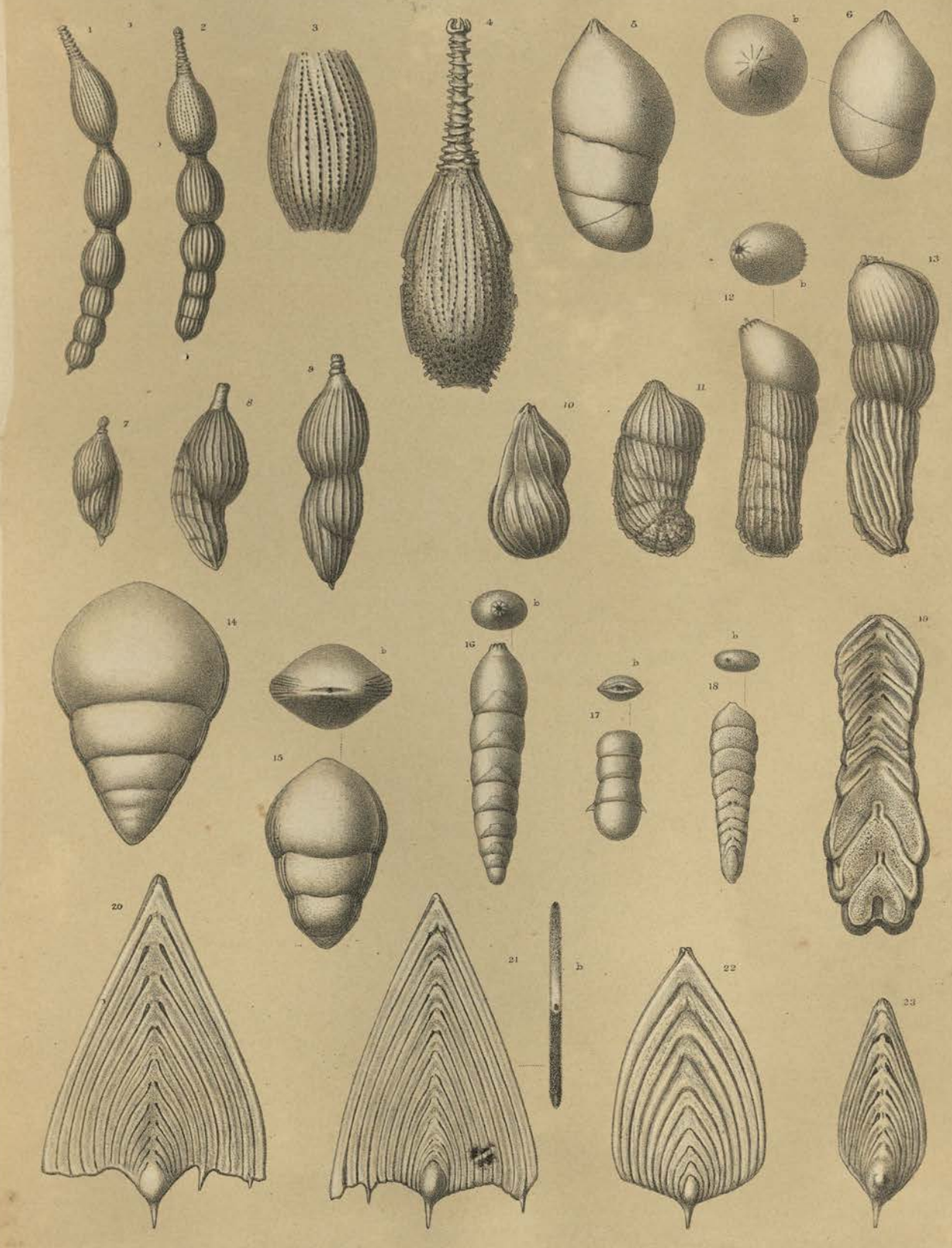
PLATE LXV.

PLATE LXV.

NODOSARIA.—MARGINULINA.—LINGULINA.—FRONDICULARIA.

(*b*, Oral aspect.)

		Diam.	Page
Figures 1, 2.—	*Nodosaria intercellularis*, Brady,	× 40	515
,, 3, 4.—	Portions of the shell more highly magnified,	× 100	
,, 5, 6.—	*Marginulina glabra*, d'Orbigny,	× 30	527
,, 7–9.—	*Amphicoryne falx*, Jones and Parker, sp.,	× 50–60	556
,, 10–13.—	*Marginulina costata*, Batsch, sp.,		528
	Fig. 10. × 40; fig. 11, × 30; figs. 12, 13,	× 20	
,, 14, 15.—	*Lingulina carinata*, var. *seminuda*, Hantken,	× 12	518
,, 16, 17.—	*Lingulina carinata*, d'Orbigny,	× 90	517
,, 18.—	*Frondicularia spathulata*, Brady,	× 60	519
,, 19.—	*Frondicularia compta*, Brady,	× 60	520
,, 20–23.—	*Frondicularia alata*, d'Orbigny,		522
	Specimens in different stages of growth. Figs. 20–22. × 15;—fig. 23, young shell,	× 20	



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NODOSARIA_MARGINULINA_LINGULINA_FRONDICULARIA.

Hanhart imp.

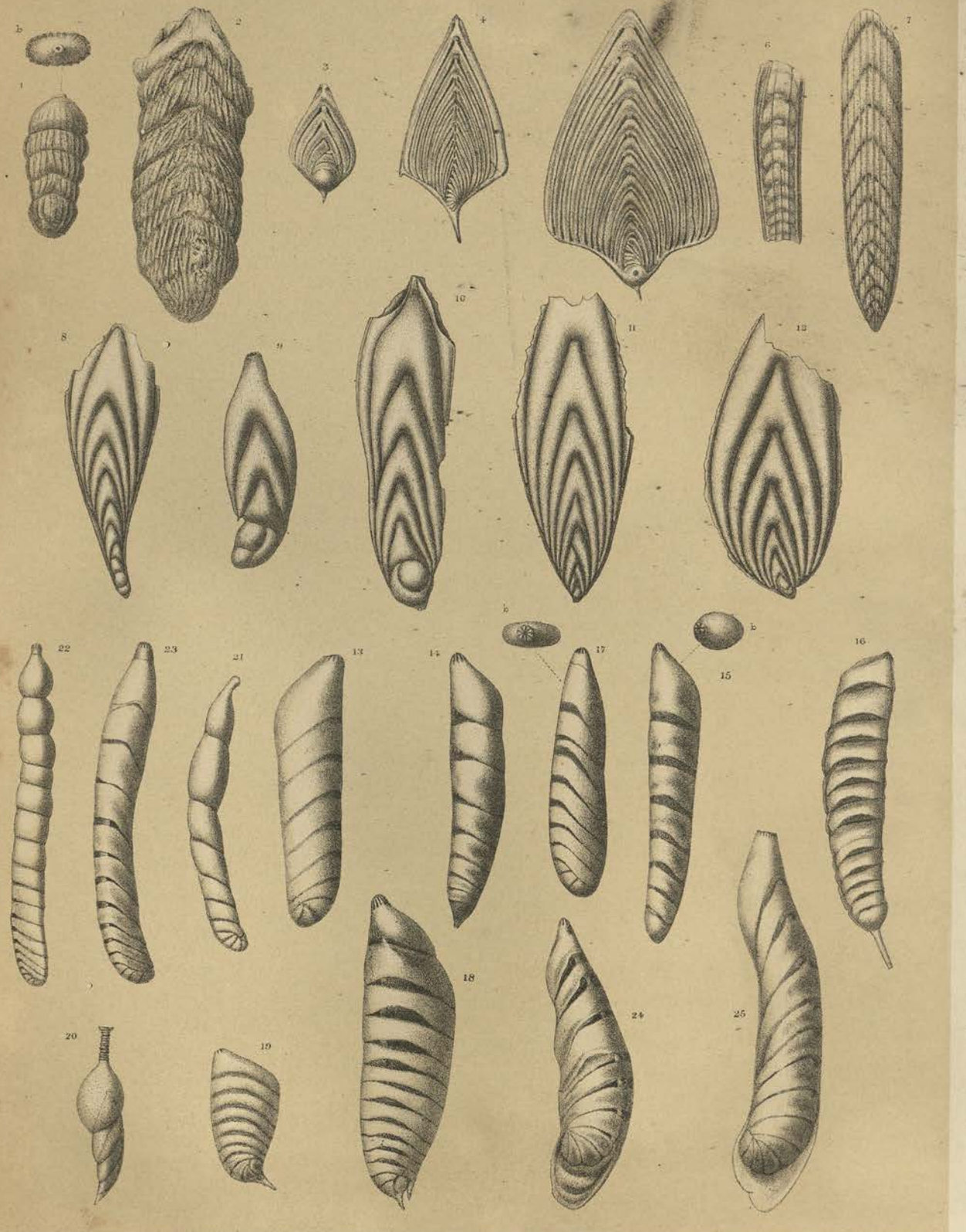
PLATE LXVI.

PLATE LXVI.

FRONDICULARIA.—VAGINULINA.—CRISTELLARIA.

(*b*, Oral aspect.)

		Diam.	Page
Figures 1, 2.—*Frondicularia robusta*, n. sp.,			523
Fig. 1*b*, Oral aspect. Fig. 1. × 75; fig. 2,	×	17	
,, 3–5.—*Frondicularia alata*, d'Orbigny (Flabelline variety),	×	15–20	522
,, 6, 7.—*Frondicularia interrupta*, Karrer,	×	60	523
,, 8–12.—*Frondicularia inæquàlis*, Costa,			521
Figs. 8–11. × 60; fig. 12,	×	45	
,, 13–15.—*Vaginulina legumen*, Linné, sp.,	×	30	530
Fig. 15*b*, Oral aspect.			
,, 16.—*Vaginulina margaritifera*, Batsch, sp.,	×	13	532
,, 17.—*Cristellaria obtusata*, Reuss,	×	25	536
b, Oral aspect.			
,, 18, 19.—*Vaginulina bruckenthali*, Neugenboren,	×	17	532
,, 20.—Intermediate specimen with Vaginuline commencement, and final Nodosarian chamber,	×	60	
,, 21–23.—*Cristellaria tenuis*, Bornemann, sp.,			
Figs. 21. × 35; figs. 22, 23,	×	20	535
,, 24, 25.—*Cristellaria obtusata*, var. *subalata*, nov.,	×	20	536



A.T. Hollick ad nat. del. et lith. Hanhart imp.

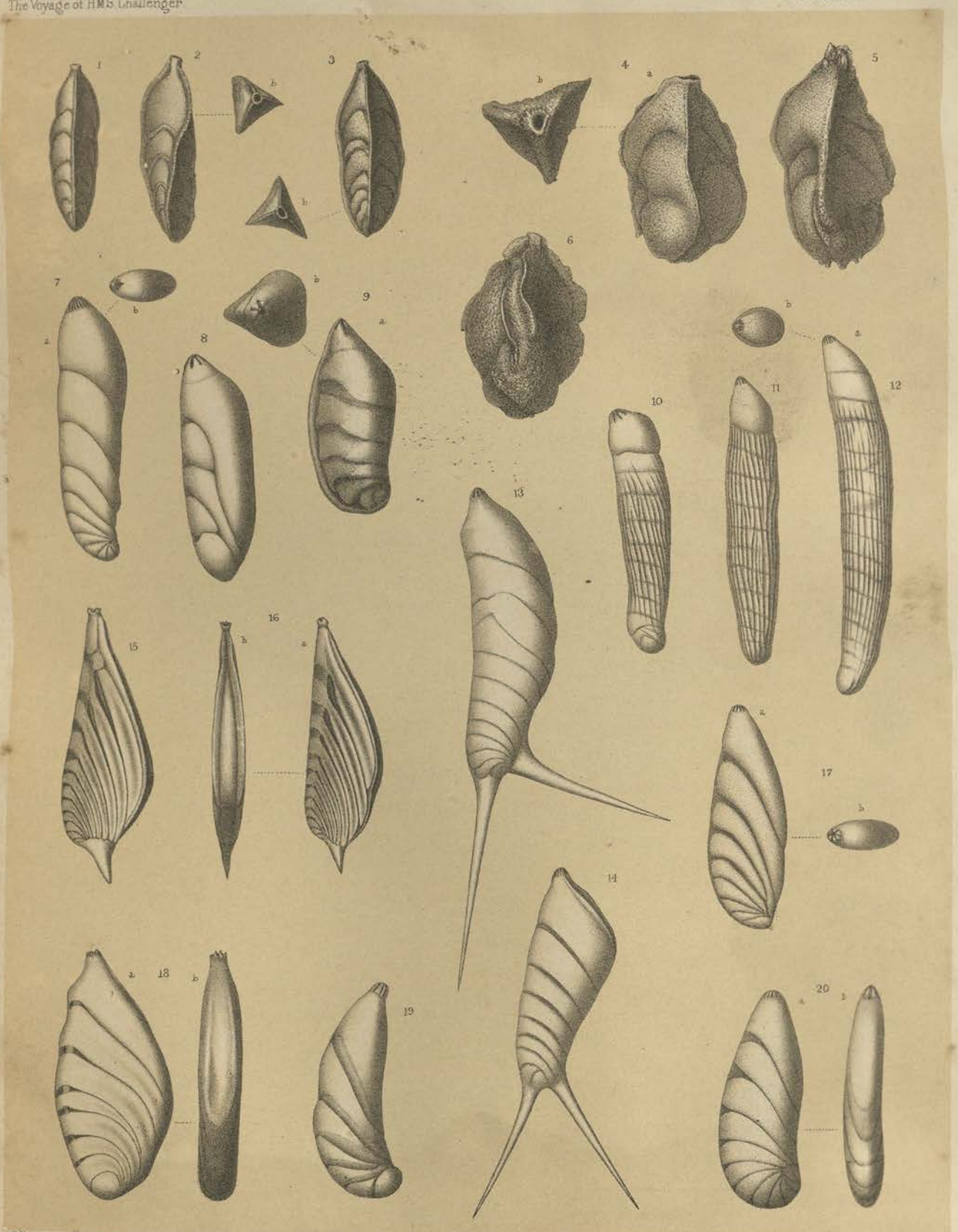
FRONDICULARIA, (Flabellina). — VAGINULINA — CRISTELLARIA.

PLATE LXVII.

PLATE LXVII.

RHABDOGONIUM.—VAGINULINA.—CRISTELLARIA.

		Diam.	Page
Figures 1–3.—*Rhabdogonium tricarinatum*, d'Orbigny, sp.,	×	75	525
b, *b*, Oral aspects.			
,, 4–6.—*Rhabdogonium minutum*, Reuss,	×	75	526
b, Oral aspect.			
,, 7.—*Cristellaria schloenbachi*, Reuss,	×	25	539
b, Oral aspect			
,, 8.—Anomalous specimen, probably of the same species,	×	60	
,, 9.—*Cristellaria italica*, var. *volpicellii*, Costa,	×	50	545
,, 10–12.—*Vaginulina linearis*, Montagu, sp.,	×	15	532
b, Oral aspect.			
,, 13, 14.—*Vaginulina spinigera*, Brady,	×	17	531
,, 15, 16.—*Vaginulina patens*, n. sp.,	×	75	533
Figs. 15, 16*a*. Lateral aspects; *b*, front peripheral aspect.			
,, 17, 19, 20.—*Cristellaria crepidula*, Fichtel and Moll, sp.,			542
Fig. 17. *a*, Lateral aspect; *b*, oral aspect,	×	60	
Figs. 19, 20 *a*. Lateral aspect; *b*, front peripheral aspect,	×	50	
,, 18.—*Cristellaria lata*, Cornuel, sp.,	×	25	539
a, Lateral aspect; *b*, front peripheral aspect.			



A.T.Hollick ad nat. del. et lith.

Hanhart imp.

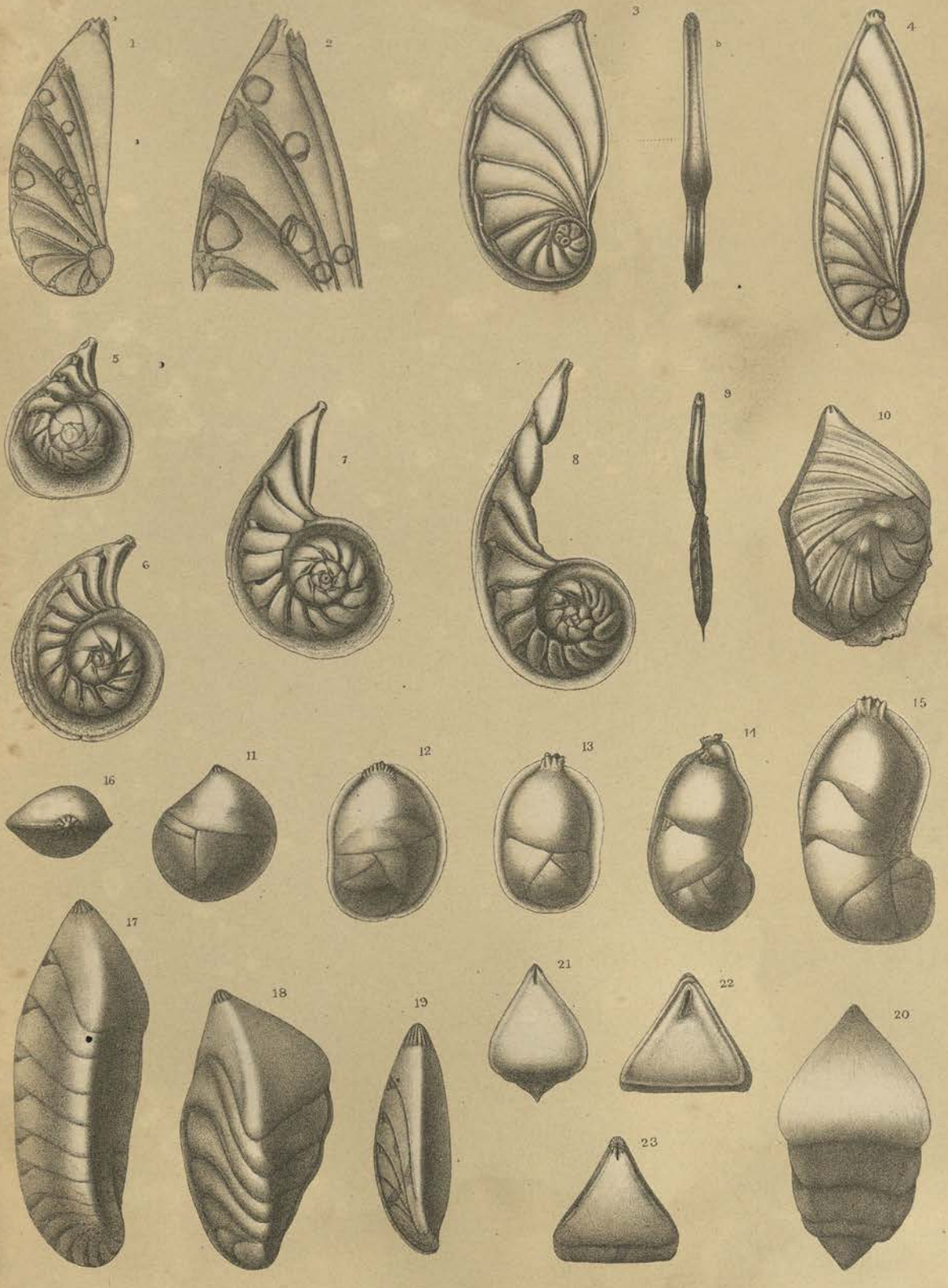
RHABDOGONIUM - VAGINULINA - CRISTELLARIA.

PLATE LXVIII.

PLATE LXVIII.

CRISTELLARIA.

		Diam.	Page
Figure 1.—*Cristellaria crepidula*, Fichtel and Moll, sp.,	×	50	542
Specimen mounted in Canada balsam; with young shells in some of the later chambers.			
,, 2.—Portion of the same, more highly magnified,	×	100	
,, 3, 4.—*Cristellaria tricarinella*, Reuss,	×	50	540
b, Front peripheral aspect.			
,, 5–9.—*Cristellaria siddalliana*, Brady,	×	35	541
Figs. 5–8. Lateral aspect; fig. 9, front peripheral aspect.			
,, 10.—*Cristellaria cassis*, Fichtel and Moll, sp.,	×	30	552
,, 11–16.—*Cristellaria variabilis*, Reuss,	×	50	541
Figs. 11–15. Lateral aspect of specimens in various stages of growth; fig. 16, oral aspect.			
,, 17, 18, 20–23.—*Cristellaria italica*, Defrance, sp.,	×	15–20	544
Figs. 17, 18. Lateral aspect; fig. 20, front peripheral aspect; figs. 21–23, oral aspect.			
,, 19.—*Cristellaria latifrons*, n. sp. (see also Pl. CXIII. fig. 11),	×	20	544



A.T. Hollick ad nat. del. et lith.

CRISTELLARIA.

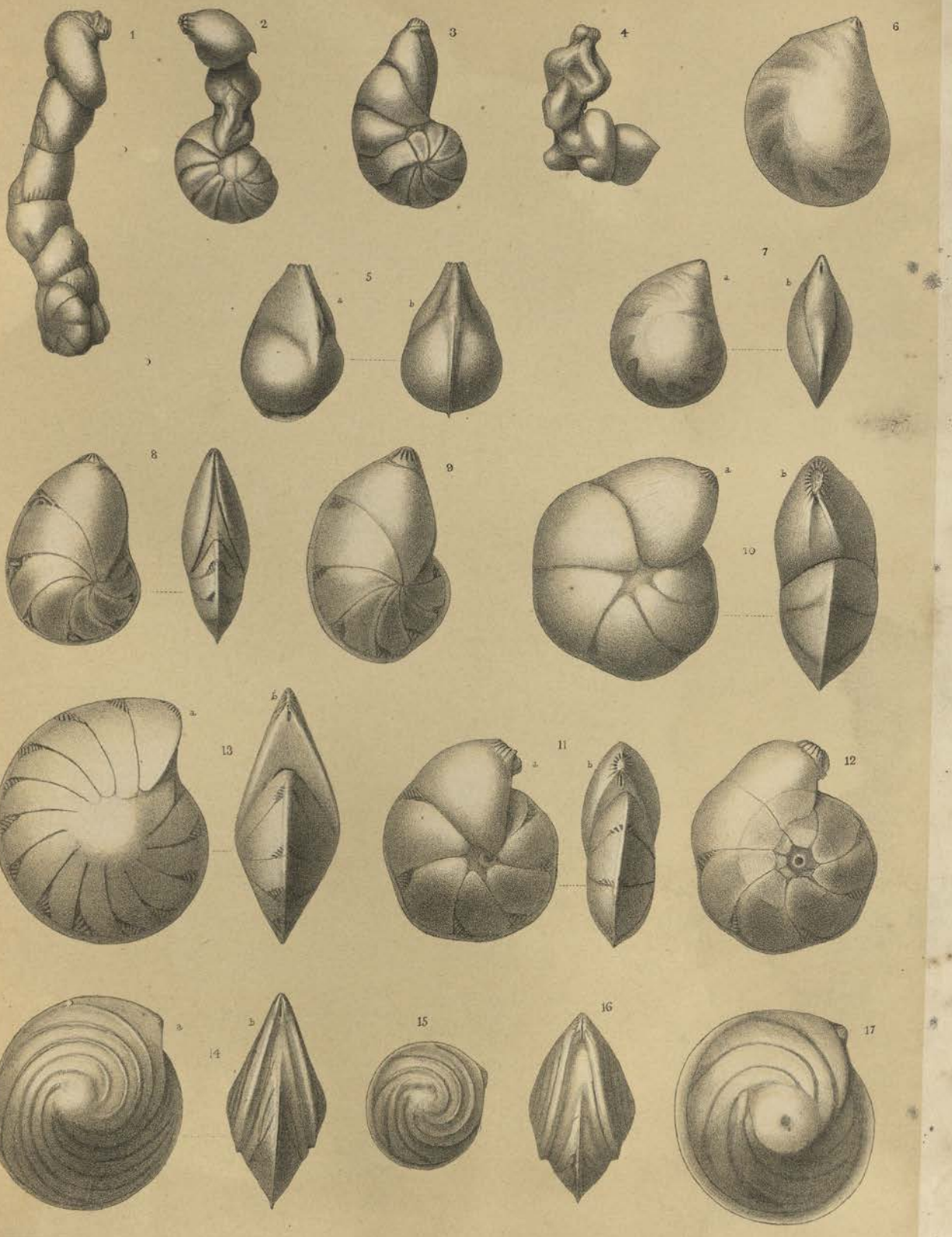
Hanhart imp.

PLATE LXIX.

PLATE LXIX.

Cristellaria.

		Diam.	Page
Figures 1–4.—*Cristellaria articulata*, Reuss, . . .	×	20	547
Wild-growing forms, abundant off Nightingale Island, Tristan d'Acunha.			
,, 5.—*Cristellaria*, sp., ...	×	35	
Young specimen, possibly of *Cristellaria deformis*, Reuss, or some similar variety.			
,, 6, 7.—*Cristellaria convergens*, Bornemann, . . .			546
Fig. 6. Lateral aspect, ...	×	40	
Fig. 7. *a*, Lateral aspect; *b*, front peripheral aspect, .	×	50	
,, 8, 9.—*Cristellaria gibba*, d'Orbigny, . . .	×	25	546
Figs 8*a*, 9. Lateral aspect; *b*, front peripheral aspect.			
,, 10–12.—*Cristellaria articulata*, Reuss, ...			547
Fig. 10. *a*, Lateral aspect; *b*, front peripheral aspect, .	×	16	
Fig. 11 *a*, 12. Lateral aspect; *b*, front peripheral aspect,	×	35	
,, 13.—*Cristellaria rotulata*, Lamarck, sp., . .	×	12	547
a, Lateral aspect; *b*, front peripheral aspect.			
,, 14–16.—*Cristellaria vortex*, Fichtel and Moll, sp., .	×	30	548
Figs. 14 *a*, 15. Lateral aspect; figs. 14 *b*, 16, front peripheral aspect.			
,, 17.—*Cristellaria orbicularis*, d'Orbigny, sp., . .	×	30	549
Lateral aspect			



A.T.Hollick, ad.nat. del. et lith.

CRISTELLARIA

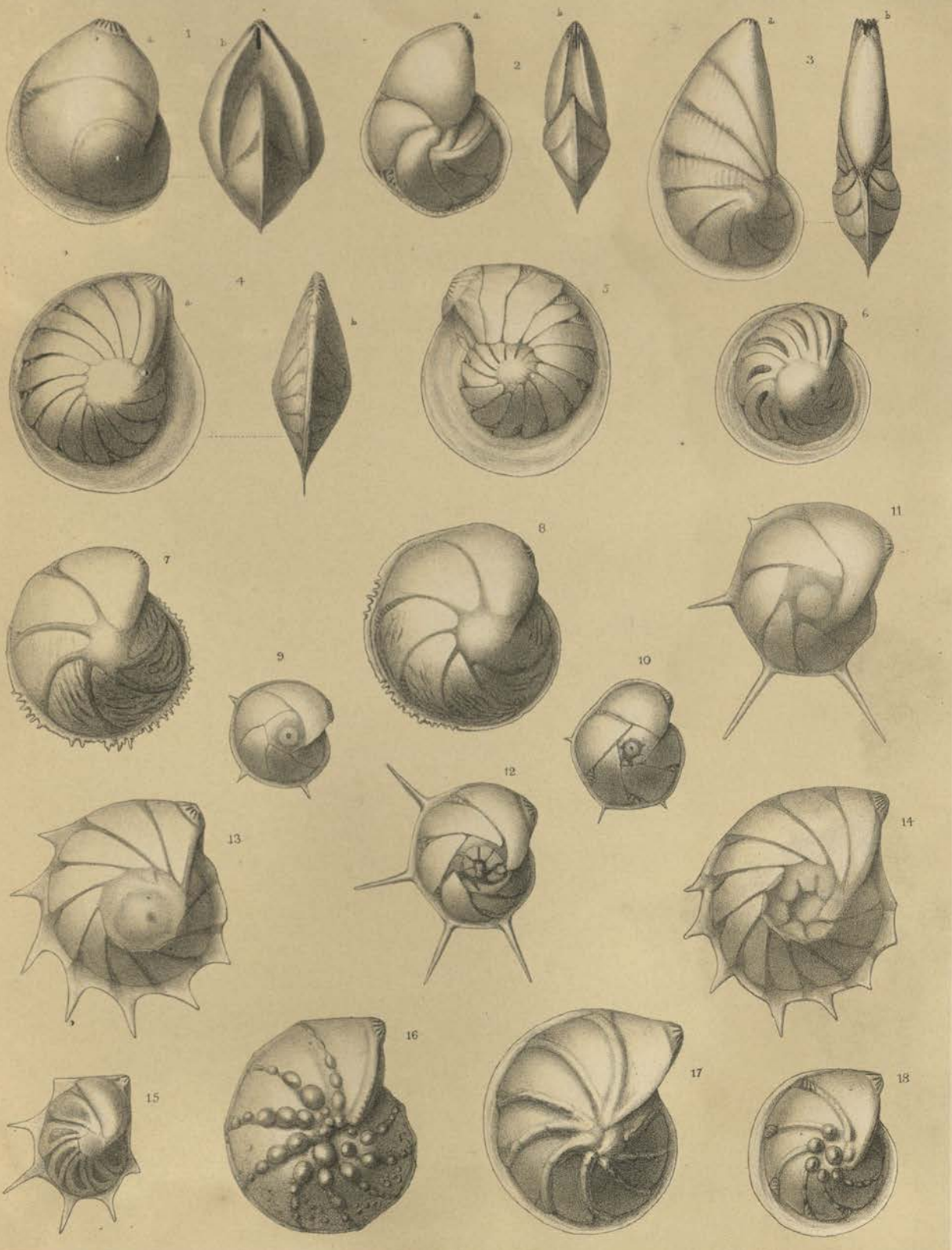
Hanhart imp.

PLATE LXX.

PLATE LXX.

Cristellaria.

			Diam.	Page
Figure 1.—*Cristellaria crassa*, d'Orbigny,		×	40	549
	a, Lateral aspect; *b*, front peripheral aspect.			
,, 2.—*Cristellaria nitida*, d'Orbigny,		×	30	549
	a, Lateral aspect; *b*, front peripheral aspect.			
,, 3.—*Cristellaria reniformis*, d'Orbigny,		×	25	539
	a, Lateral aspect; *b*, front peripheral aspect.			
,, 4–6.—*Cristellaria cultrata*, Montfort, sp.,				550
	Fig. 4. *a*, Lateral aspect; *b*, front peripheral aspect,	×	16	
	Fig. 5, 6. Lateral aspects. Fig. 5 × 15 diam.; fig. 6	×	35	
,, 7, 8.—Specimens of the same, with dentate carina,		×	20	550
,, 9–15.—*Cristellaria calcar*, Linné, sp.,				551
	Lateral aspect; figs. 9–12, 15, × 35 diam.; figs. 13, 14,	×	25	
,, 16.—*Cristellaria papillosa*, Fichtel and Moll,		×	20	553
	Lateral aspect.			
,, 17, 18.—*Cristellaria mamilligera*, Karrer,		×	20	553
	Lateral aspect.			



A.T. Hollick ad nat. del. et lith.

Hanhart imp.

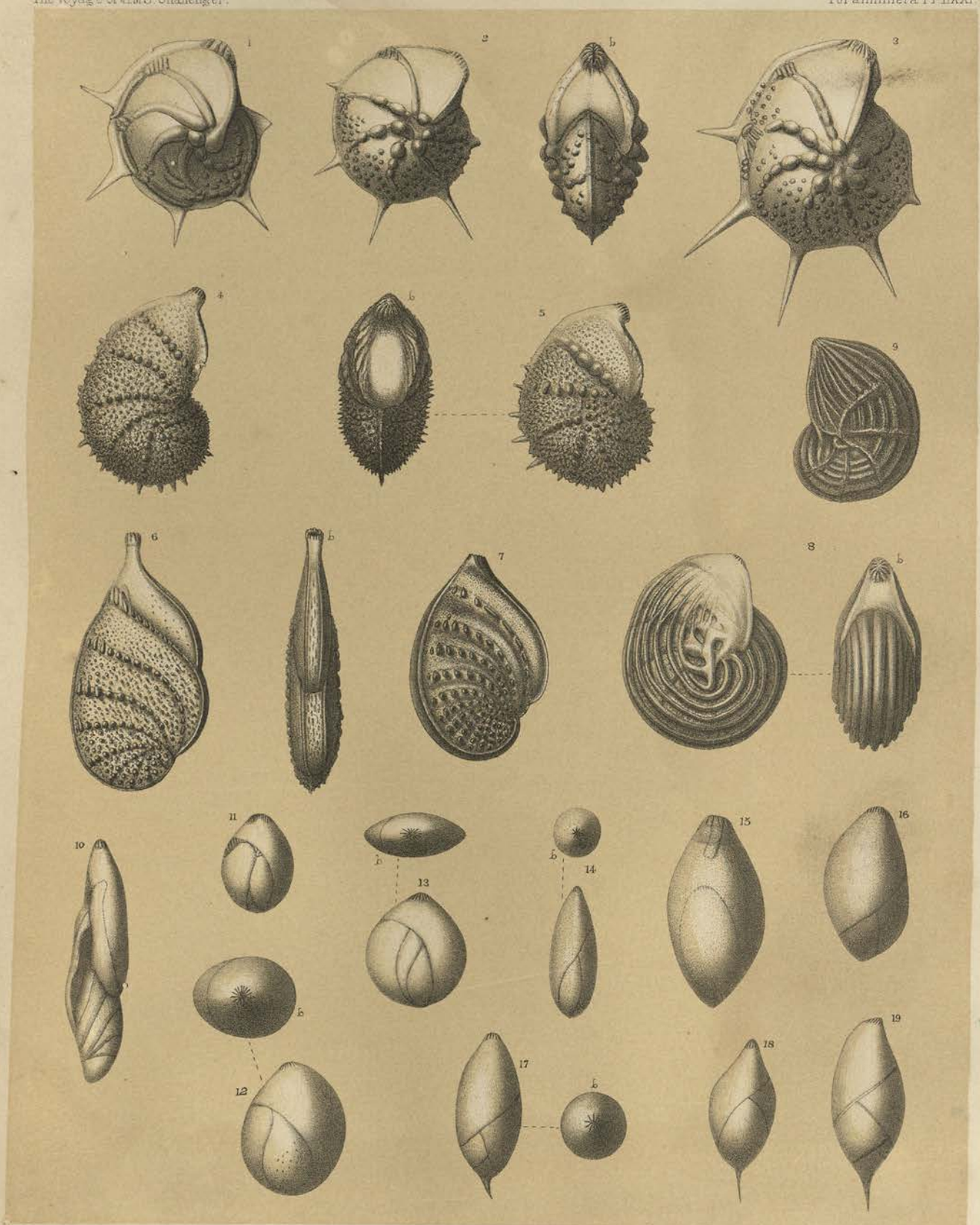
CRISTELLARIA.

PLATE LXXI.

PLATE LXXI.

CRISTELLARIA.—POLYMORPHINA.

			Diam.	Page
Figures 1–3.	—*Cristellaria echinata*, d'Orbigny, sp., . . .			554
	b, Front peripheral aspect; fig. 1, × 30; figs. 2, 3, .	×	20	
,, 4, 5.	—*Cristellaria aculeata*, d'Orbigny, . . .	×	25	555
	b, Front peripheral aspect.			
,, 6, 7.	—*Cristellaria gemmata*, Brady, . . .	×	35	554
	b, Front peripheral aspect.			
,, 8, 9.	—*Cristellaria costata*, Fichtel and Moll, sp., .	×	35	555
	b, Front peripheral aspect.			
10.	—Dimorphous specimen, the earlier chambers arranged as in *Cristellaria*, the later ones as in *Polymorphina*, ...	×	50	
,, 11.	—*Polymorphina lactea*, Walker and Jacob, . .	×	50	559
,, 12.	—*Polymorphina gibba*, d'Orbigny, . . .	×	40	561
	b, Oral aspect.			
,, 13.	—*Polymorphina amygdaloides*, Reuss, . .	×	75	560
	b, Oral aspect.			
,, 14.	—*Polymorphina lactea*, Walker and Jacob,—elongate variety, ...	×	75	559
	b, Oral aspect.			
,, 15, 16.	—*Polymorphina sororia*, Reuss, . . .	×	50	562
,, 17–19.	—*Polymorphina sororia*, var. *cuspidata*, nov., .	×	60	563
	b, Oral aspect.			



A.T. Hollick ad nat. del. et lith.

Hanhart imp.

CRISTELLARIA-POLYMORPHINA

PLATE LXXII.

PLATE LXXII.

Polymorphina.

		Diam.	Page
Figures 1–3.—*Polymorphina angusta*, Egger, *b*, Oral aspect.	×	45–60	563
,, 4.—*Polymorphina sororia*, var. *cuspidata*, nov., *b*, Oral aspect.	×	50	563
,, 5, 6.—*Polymorphina lanceolata*, Reuss, *b*, *b*, Oral aspect.	×	45	564
,, 7, 8.—*Polymorphina ovata*, d'Orbigny, *b*, Oral aspect.	×	25	564
,, 9–11.—*Polymorphina compressa*, d'Orbigny, *b*, Oral aspect. Fig. 9. × 18 diam.; fig. 10, × 25 diam.; fig. 11,	×	40	565
,, 12–15.—*Polymorphina elegantissima*, Parker and Jones, *b*, *b*, *b*, Oral aspect.	×	50	566
,, 16, 17.—*Polymorphina seguenzana*, n. sp., *b*, Oral aspect.	×	40	567
,, 18.—*Polymorphina thouini*, d'Orbigny,	×	18	567
,, 19.—*Polymorphina communis*, d'Orbigny,	×	50	568
,, 20.—*Polymorphina problema*, d'Orbigny, *b*, Oral aspect.	×	40	568

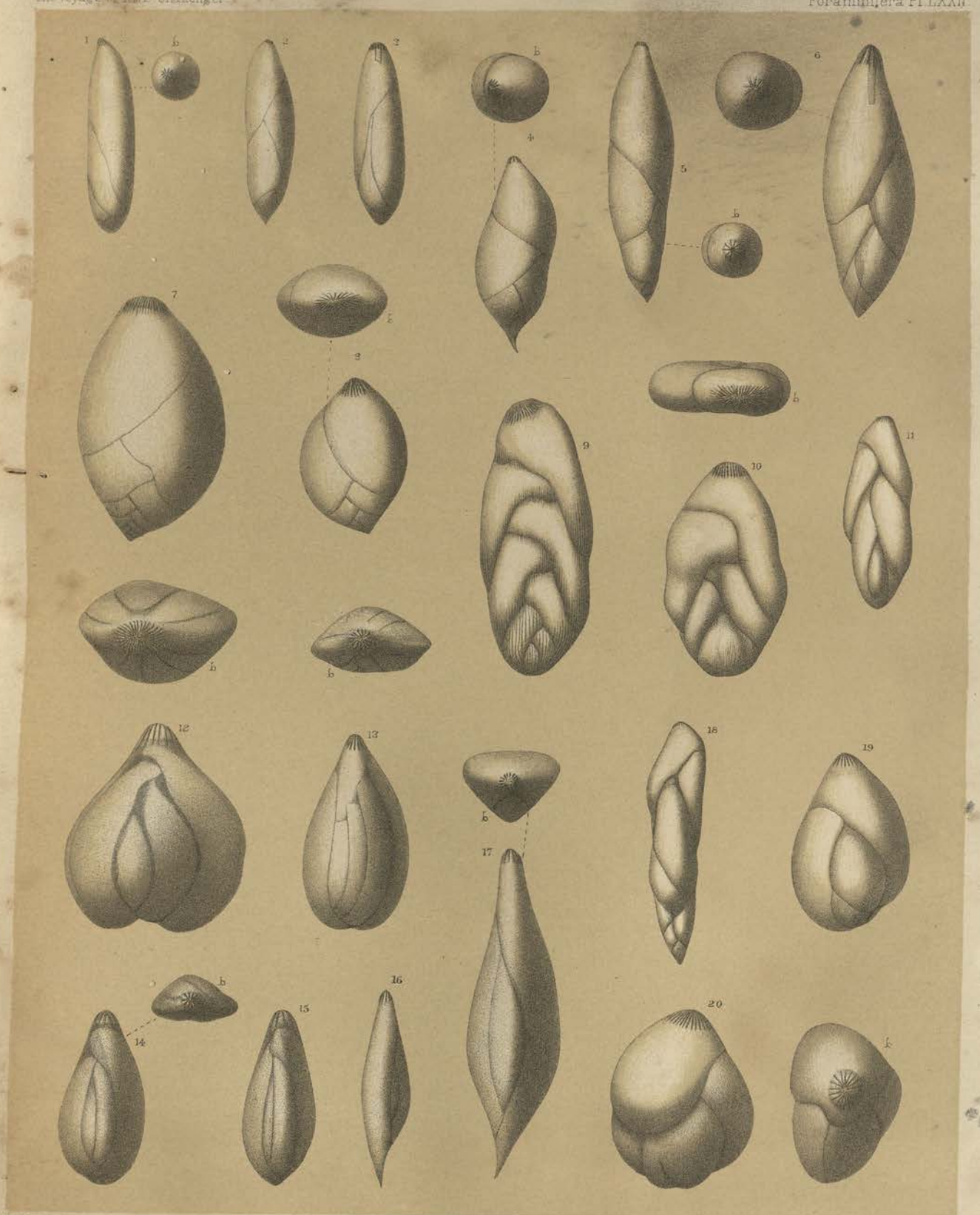
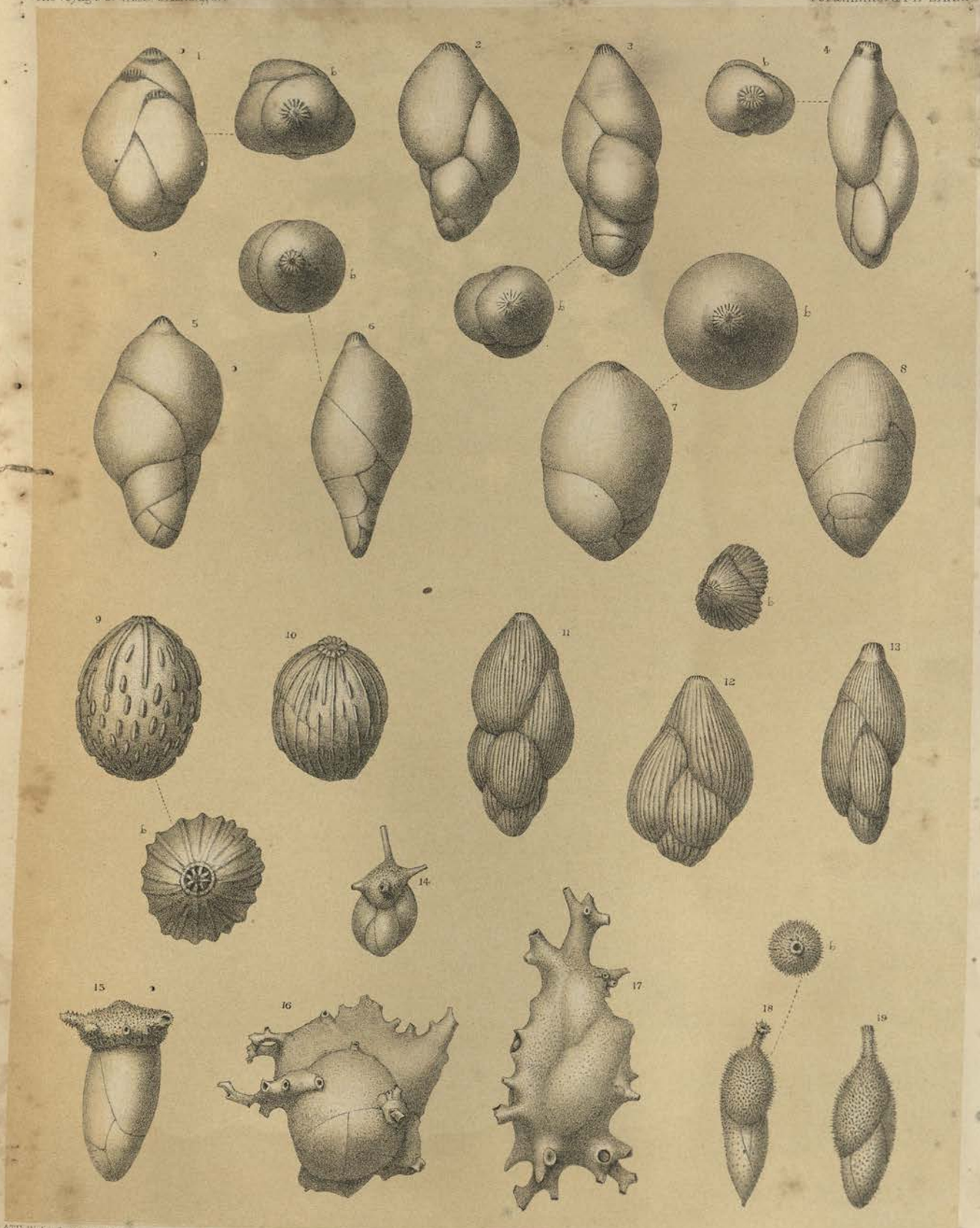


PLATE LXXIII.

PLATE LXXIII.

Polymorphina.

		Diam.	Page
Figure 1.—*Polymorphina problema*, d'Orbigny,	×	40	568
b, Oral aspect.			
,, 2–4.—*Polymorphina oblonga*, d'Orbigny,	×	40	569
b, Oral aspect.			
,, 5–8.—*Polymorphina rotundata*, Bornemann, sp.,	×	30	570
b, *b*, Oral aspect.			
,, 9, 10.—*Polymorphina myristiformis*, Williamson,	×	60–75	571
b, Oral aspect.			
,, 11–13.—*Polymorphina regina*, Brady, Parker, and Jones,	×	35–50	571
b, Oral aspect.			
,, 14.—*Polymorphina lactea*, fistulose form,	×	50	560
,, 15.—*Polymorphina sororia*, fistulose form,	×	30	562
,, 16.—*Polymorphina gibba*, fistulose form,	×	35	562
,, 17.—*Polymorphina compressa*, fistulose form,	×	50	566
,, 18, 19.—*Polymorphina longicollis*, Brady,	×	50–60	572
b, Oral aspect.			



A.T.Hollick ad nat. del. et lith.

POLYMORPHINA

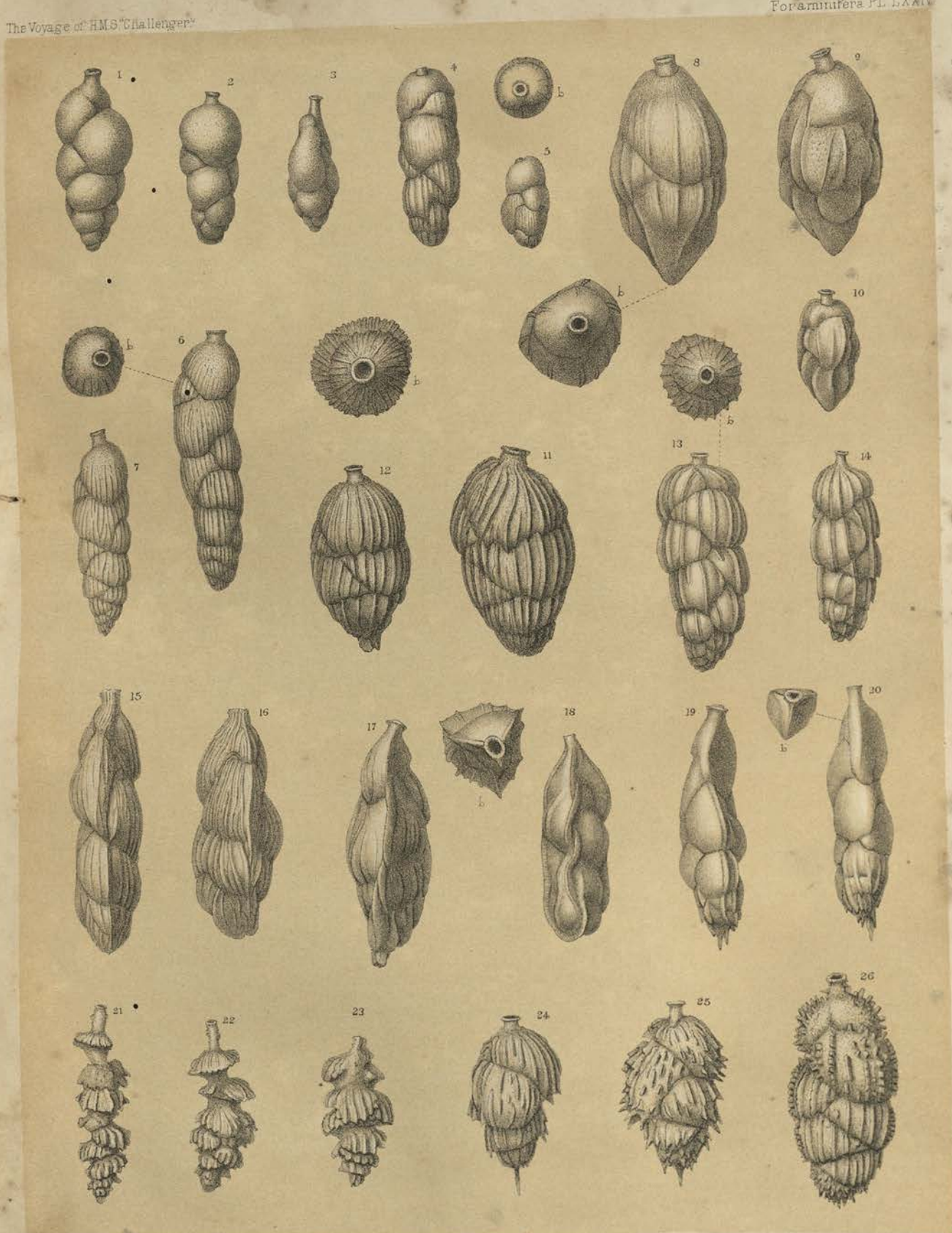
Hanhart imp.

PLATE LXXIV.

PLATE LXXIV.

UVIGERINA.

		Diam.	Page
Figures 1–3.—*Uvigerina canariensis*, d'Orbigny,			573
Lateral aspect; fig. 1, × 50 diam.; fig. 2, × 60; fig. 3,	×	75	
„ 4–7.—*Uvigerina tenuistriata*, Reuss,			574
Figs. 4, 5. Lateral aspect; *b*, oral aspect,	×	50	
Figs. 6, 7. Lateral aspect; *b*, oral aspect,	×	45	
„ 8–10.—*Uvigerina schwageri*, n. sp.,	×	30	575
Figs. 8, 9. Lateral aspect; *b*, oral aspect. Fig. 10. Young specimen.			
„ 11–14.—*Uvigerina pygmæa*, d'Orbigny,			575
Figs. 11, 12. Typical form, lateral aspect; *b*, oral aspect,	×	50	
Figs. 13, 14. Elongate variety, lateral aspect; *b*, oral aspect,	×	60	
„ 15–18.—*Uvigerina angulosa*, Williamson,	×	60	576
Figs. 15–18. Lateral aspect; *b*, oral aspect.			
„ 19, 20.—*Uvigerina angulosa*, var. *spinipes*, Brady,	×	60	577
Figs. 19, 20. Lateral aspect; *b*, oral aspect.			
„ 21, 23.—*Uvigerina porrecta*, Brady,	×	70	577
Lateral aspect.			
„ 24–26.—*Uvigerina*, sp.,	×	40–55	575
Intermediate specimens connecting *Uvigerina pygmæa* with *Uvigerina aculeata*.			



A.F. Hollyck ad nat. del. et lith

Hanhart imp.

UVIGERINA

PLATE LXXV.

PLATE LXXV.

UVIGERINA.—SAGRINA.

		Diam.	Page
Figures 1–3.—*Uvigerina aculeata*, d'Orbigny, . . .	×	35	578
Fig. 2. Typical specimen—lateral aspect; *b*, oral aspect.			
Figs. 1, 3. Intermediate specimens connecting the species with the costate forms, . . .			575
„ 4, 5.—*Uvigerina brunnensis*, Karrer, . . .	×	45	577
Lateral aspect.			
„ 6–8.—*Uvigerina asperula*, Czjzek, . . .	×	50	578
Figs. 6, 7, 8. Lateral aspect; *b*, oral aspect.			
„ 9.—*Uvigerina asperula*, var. *auberiana*, d'Orbigny, .	×	40	579
Lateral aspect.			
„ 10, 11.—*Uvigerina asperula*, var. *ampullacea*, nov., .	×	60	579
Figs. 10, 11. Lateral aspect; *b*, oral aspect.			
„ 12–14.—*Uvigerina interrupta*, Brady, . . .	×	70	580
Lateral aspect.			
„ 15–17.—*Sagrina columellaris*, Brady, . . .	×	45	581
Figs. 15, 16, 17. Lateral aspect; *b*, oral aspect.			
„ 18–20.—*Sagrina bifrons*, Brady, ...	×	50	582
Figs. 18, 19, 20. Lateral aspect; *b*, oral aspect.			
„ 21–24.—*Sagrina raphanus*, Parker and Jones, . . .			585
Figs. 21, 22, 23. Lateral aspect; *b*, *b*, oral aspect, .	×	60	
Figs. 24. Elongate tapering variety, . .	×	45	
„ 25, 26.—*Sagrina striata*, Schwager, . . .	×	45	584
Lateral aspect.			

A.T. Hollick ad nat. del. et lith.

UVIGERINA (Uvigerina - Sagrina.)

Hanhart imp.

PLATE LXXVI.

PLATE LXXVI.

Sagrina.—Ramulina.—Nubecularia.

	Diam.	Page
Figures 1–3.—*Sagrina dimorpha*, Parker and Jones, . .	× 60	582
Figs. 1, 2, 3. Lateral aspect; *b*, oral aspect.		
„ 4–10.—*Sagrina virgula*, Brady, ...		583
Figs. 4–7. Typical shallow-water form, . .	× 70	
Figs. 8–10. Monomorphous thicker-shelled specimens from deeper water, . . .	× 50-70	
„ 11–16.—*Nubecularia divaricata*, Brady, . . .	× 70	136
Figs. 11–14. Lateral aspect.		
Figs. 15, 16. Oral end of the test, showing the grooved tubular neck and everted lip.		
„ 17–19.—*Sagrina* (?) *tessellata*, n. sp., ...		585
Figs. 17, 18. Lateral aspect; *b*, oral aspect, . .	× 75	
Fig. 19. Terminal segment more highly magnified, .	× 150	
„ 20, 21.—*Sagrina* (?) *annulata*, n. sp., ...		586
Fig. 20. Lateral aspect; *b*, oral aspect, . .	× 60	
Fig. 21. Terminal segment more highly magnified, .	× 100	
„ 22–28.—*Ramulina globulifera*, Brady, . . .	× 35	587

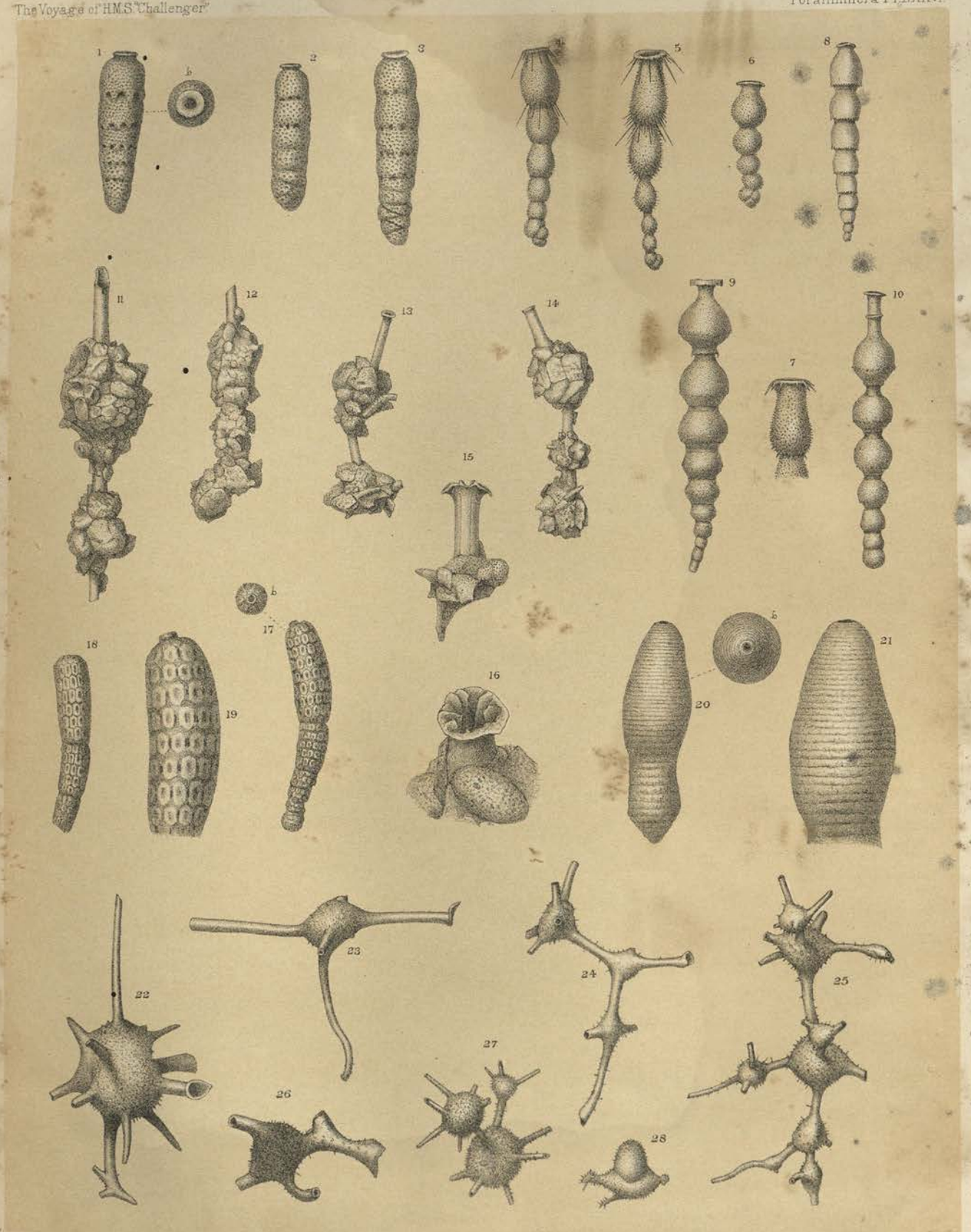

1
b
2
3
4
5
6
8
11
12
13
14
9
10
7
15
b
17
18
19
16
b
20
21
22
23
24
25
27
26
28

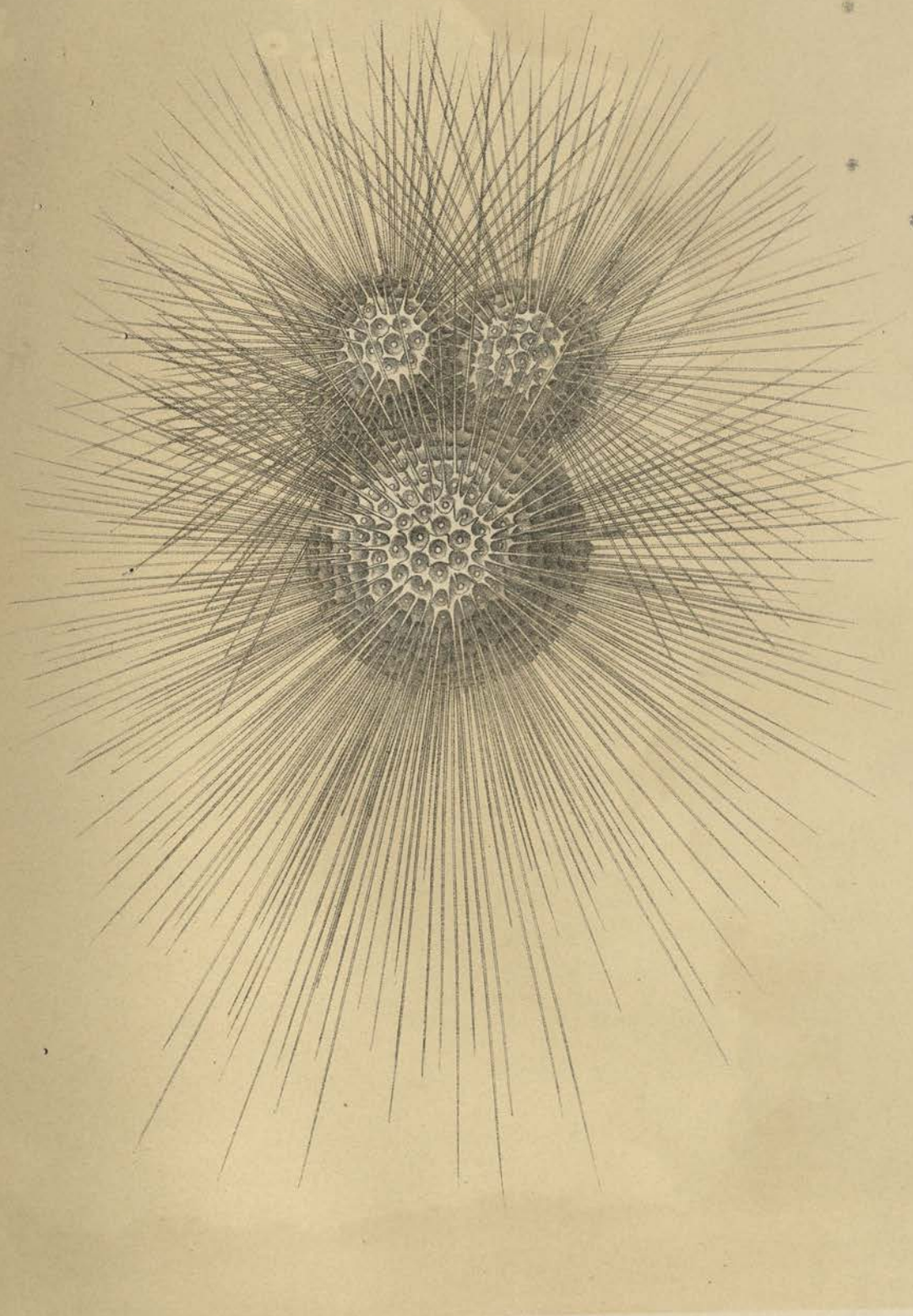
PLATE LXXVII.

PLATE LXXVII.

GLOBIGERINA.

	Diam.	Page
Globigerina bulloides, d'Orbigny, ...	× 200	593

Surface specimen, immediately after being taken from the sea; drawn by Mr. Wild .



J.J.Wild ad nat. del. A.T.Hollick lith.

Hanhart imp.

GLOBIGERINA.

PLATE LXXVIII.

PLATE LXXVIII.

ORBULINA.

		Diam.	Page
Orbulina universa, d'Orbigny, ...	×	40	608

Surface specimen, immediately after being taken from the sea; drawn by Mr. Wild.

GLOBIGERINA (Orbulina)

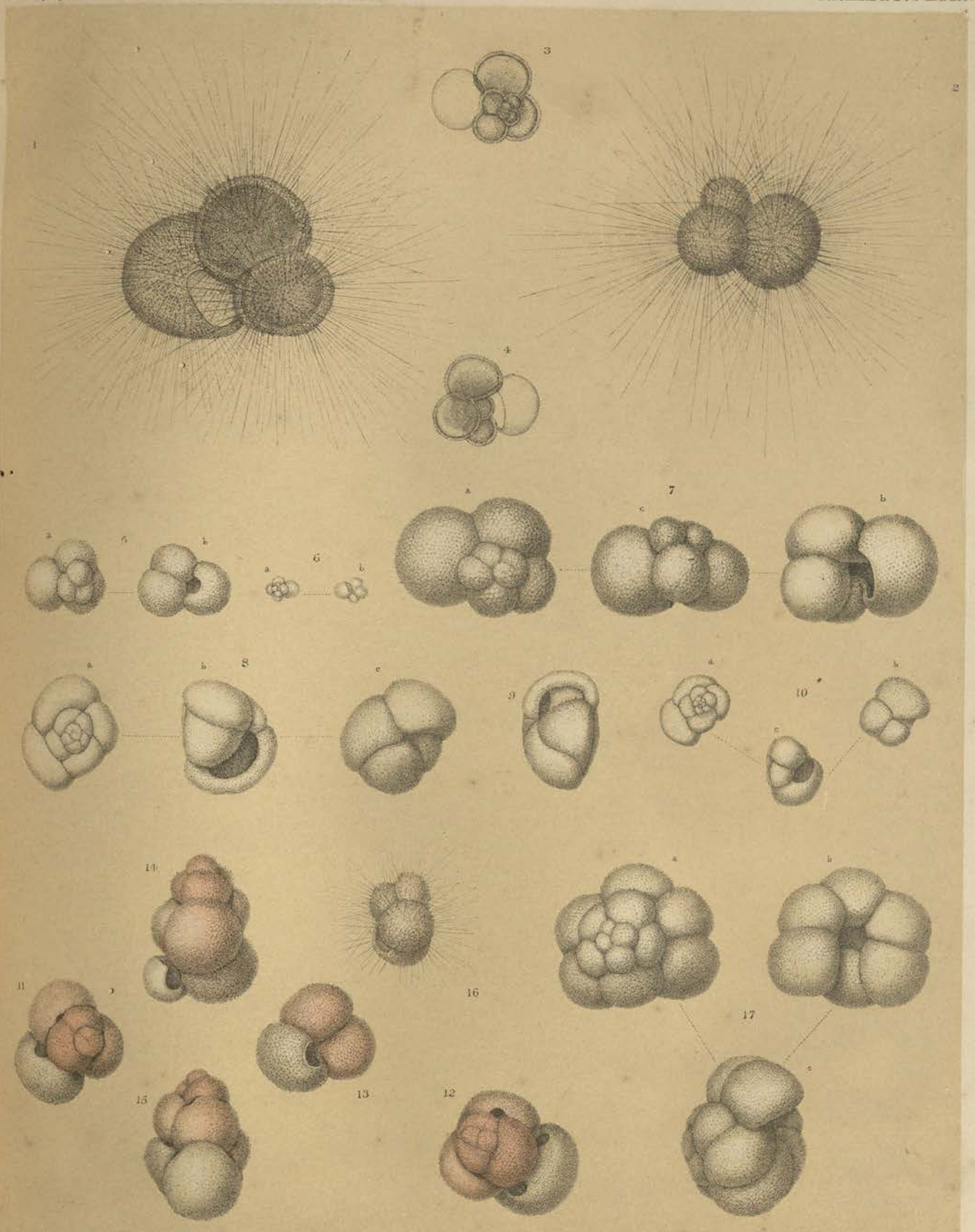
PLATE LXXIX.

PLATE LXXIX.

GLOBIGERINA.

a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.

		Diam.	Page
Figures 1–7.—*Globigerina bulloides*, d'Orbigny, . . .	×	50	593
Figs. 1, 2. Var. *triloba*, Reuss; spinous pelagic specimens, ...			595
Figs. 3, 4. Typical form; non-spinous pelagic specimens, ...			593
Figs. 5–7. Typical form, bottom specimens; fig. 5, young example; fig. 6, adult specimen of the starved form common on the British coast; fig. 7, adult typical shell, . . .			593
„ 8–10.—*Globigerina inflata*, d'Orbigny, . . .	×	50	601
Figs. 8, 9. Bottom specimens.			
Fig. 10. Pelagic specimen.			
„ 11–16.—*Globigerina rubra*, d'Orbigny, . . .	×	50	602
Figs. 11–15. Bottom specimens; figs. 11, 12, superior aspect, showing supplementary apertures; fig. 13, inferior aspect; fig. 14, peripheral aspect.			
Fig. 16. Young, spinous, pelagic specimen.			
„ 17.—*Globigerina dubia*, Egger, . . .	×	50	595
Bottom specimen.			



A.T.Hollick ad nat. del. et lith.

Hanhart imp.

GLOBIGERINA.

PLATE LXXX.

PLATE LXXX.

GLOBIGERINA.

		Diam.	Page
Figures 1–5.—*Globigerina conglobata*, Brady, . . .	×	50	603

Figs. 1–3. Bottom specimens; figs. 1, 2, superior aspect, showing supplementary apertures; fig. 3, inferior aspect.
Fig. 4. Spinous pelagic specimen.
Fig. 5. Section of the shell, showing its thickness, and the coarse tubulation of the walls.

,, 6–10.—*Globigerina digitata*, Brady, . . .	×	50	599

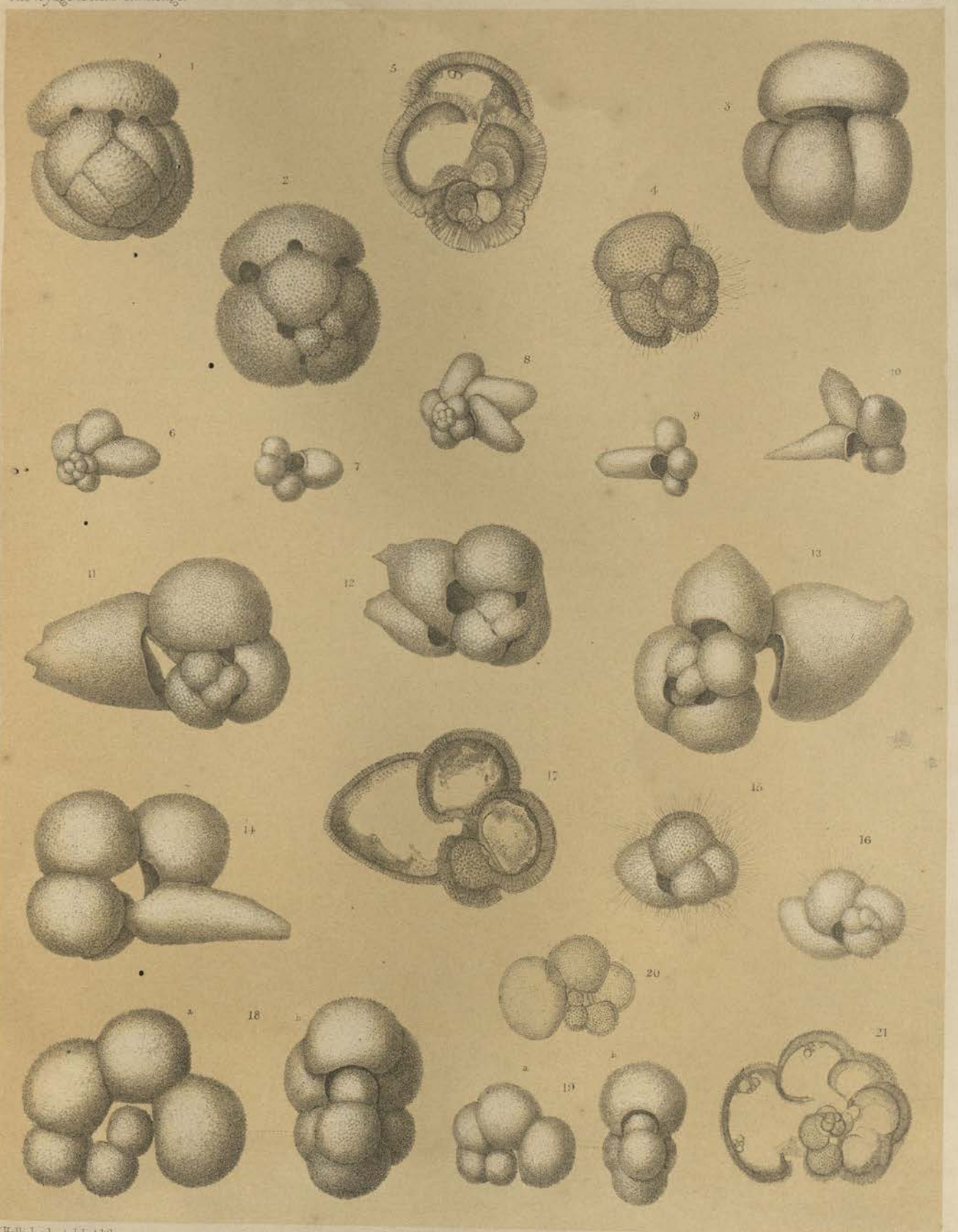
Bottom specimens; figs. 6, 8, superior aspect; figs. 7, 9, inferior aspect; fig. 10, peripheral aspect.

,, 11–17.—*Globigerina sacculifera*, Brady, . . .	×	50	604

Figs. 11–14. Bottom specimens; figs. 11–13, superior aspect; fig. 14, inferior aspect.
Figs. 15, 16. Small pelagic specimens, in the spinous condition.
Fig. 17. Section of the shell, showing its thickness and the coarse tubulation of the walls.

,, 18–21.—*Globigerina æquilateralis*, Brady, . .	×	50	605

Figs. 18, 19. Bottom specimens; *a*,*a*, lateral aspect; *b*,*b*, peripheral aspect.
Fig. 20. Surface specimen.
Fig. 21. Section of the shell.



A.T.Hollick ad nat. del. et lith.

GLOBIGERINA.

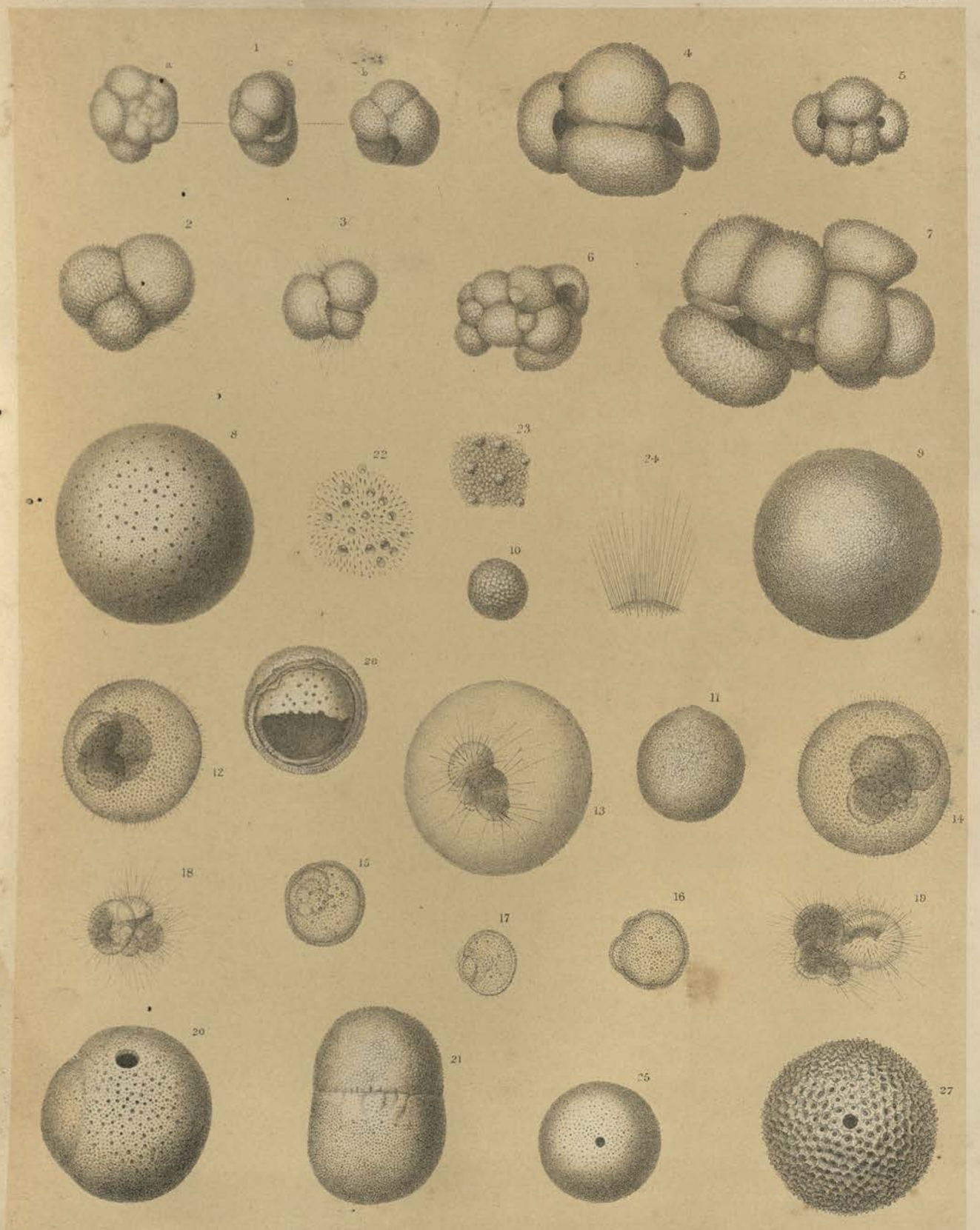
Hanhart imp.

PLATE LXXXI.

PLATE LXXXI.

Globigerina.—Orbulina.

		Diam.	Page
Figure 1.—*Globigerina dutertrei*, d'Orbigny, . . .	×	50	601
Bottom specimen; *a*, superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
„ 2, 3.—*Globigerina bulloides*, var. *triloba*, Reuss, . .	×	50	595
Bottom specimens.			
„ 4, 5.—*Globigerina helicina*, d'Orbigny, . . .	×	50	605
Fig. 4. Inferior aspect; fig. 5, superior aspect.			
„ 6, 7.—*Globigerina*,—wild-growing monstrous forms, .	×	50	593
Bottom specimens.			
„ 8–26.—*Orbulina universa*, d'Orbigny, . . .			608
Figs. 8–11. Bottom specimens; fig. 10, small dark-coloured variety common in shallow water on the British coast, ...	×	50	
Figs. 12–14. Surface specimens, . . .	×	50	
Figs. 15–17. Small bottom specimens in which the Globigerine shell is not completely enveloped by the Orbuline chamber, . .	×	50	
Figs. 18, 19. Internal Globigerine shells partially filled with sarcode; from balsam-mounted specimens,	×	50	
Figs. 20, 21. Two-chambered specimens. Such forms constitute the *Globigerina bilobata* of d'Orbigny, ...	×	50	
Figs. 22, 23. Portions of the test more highly magnified; showing (22) the large and small perforations, and (23) a granular or tuberculate condition of the exterior, . . .	×	100	
Fig. 24. Portion of a spinous shell, . .	×	50	
Fig. 25. Bottom specimen with a general aperture (?); copied from Williamson, . . .	×	50	
Fig. 26. Bottom specimen, showing the laminated condition of the walls, . . .	×	50	
„ 27.—*Orbulina porosa*, Terquem, . . .	×	50	611



A.T. Hollick ad nat. del. et lith.

Hanhart imp.

GLOBIGERINA (Globigerina_Orbulina).

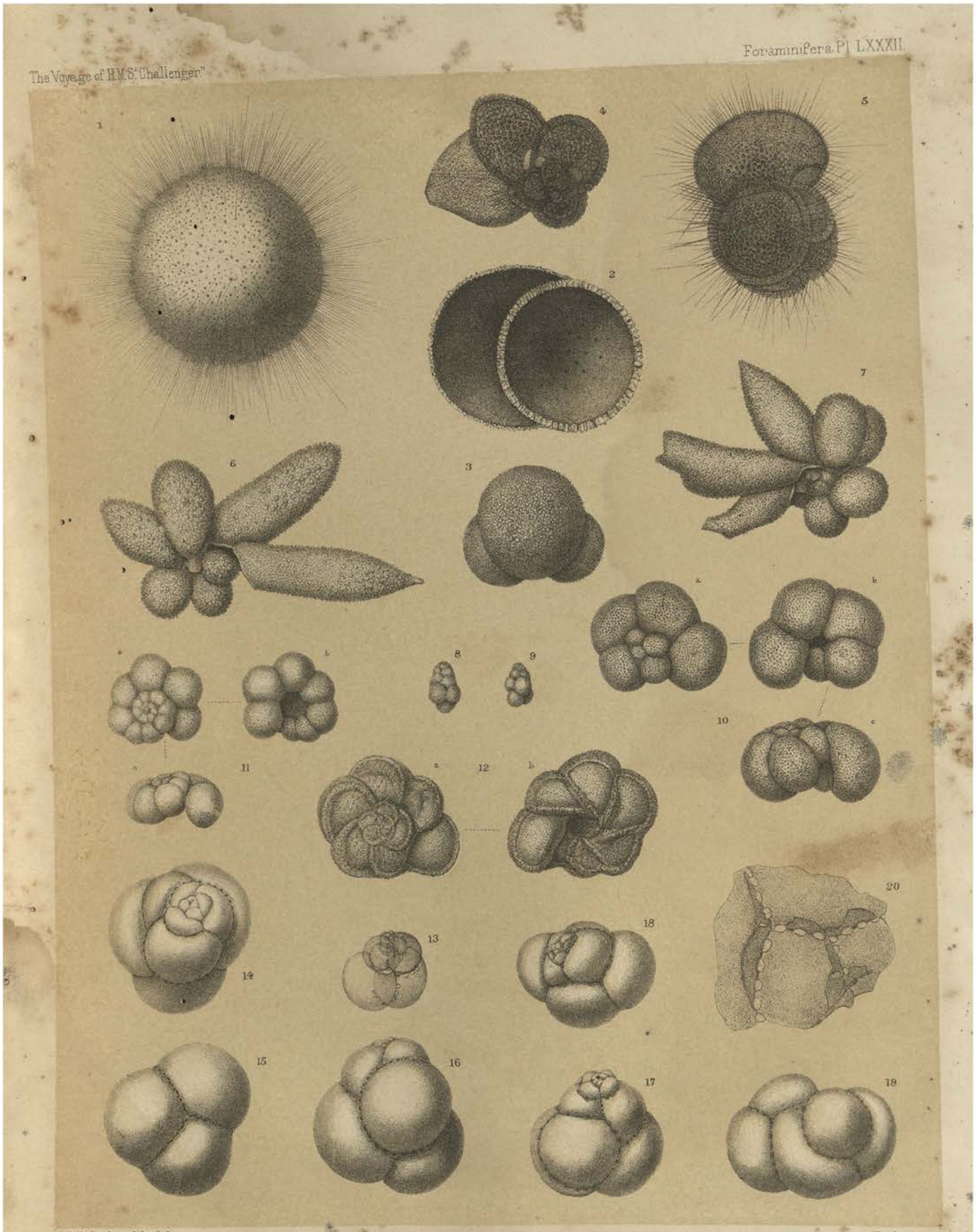
PLATE LXXXII.

PLATE LXXXII.

GLOBIGERINA.—ORBULINA.—CANDEINA.

a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.

			Diam.	Page
Figures 1–3.	*Orbulina universa*, d'Orbigny,	×	50	608
	Fig. 1. Spinous pelagic specimen.			
	Fig. 2. Two-chambered shell laid open.			
	Fig. 3. Specimen with two supplementary chambers.			
,, 4.	*Globigerina sacculifera*, Brady,	×	50	604
	Adult pelagic specimen.			
,, 5.	*Globigerina conglobata*, Brady,	×	50	603
	Adult pelagic specimen.			
,, 6, 7.	*Globigerina digitata*, Brady,	×	50	599
	Large bottom specimens.			
,, 8, 9.	*Globigerina*, sp.,	×	50	603
	Minute *Globigerinæ*; general contour resembling that of *Globigerina elevata*, d'Orbigny, and *Globigerina trochoides*, Reuss.			
,, 10.	*Globigerina* (*cretacea*, d'Orbigny?),	×	50	596
	Bottom specimen.			
,, 11.	*Globigerina cretacea*, d'Orbigny,	×	50	596
	Fossil specimen.			
,, 12.	*Globigerina linnæana*, d'Orbigny, sp.,	×	50	598
	Fossil specimen.			
,, 13–20.	*Candeina nitida*, d'Orbigny,			622
	Fig. 13. Pelagic specimen,	×	50	
	Figs. 14–18. Bottom specimens; figs. 14, 18, superior aspect; fig. 15, inferior aspect; figs. 16, 17, peripheral aspect,	×	50	
	Fig. 19. Monstrous specimen,	×	50	
	Fig. 20. Portion of the shell more highly magnified, showing the sutural apertures and the minute perforation of the walls,	×	100	



A. Hollick ad nat. del. et lith.

GLOBIGERINA (Globigerina-Orbulina) CANDEINA

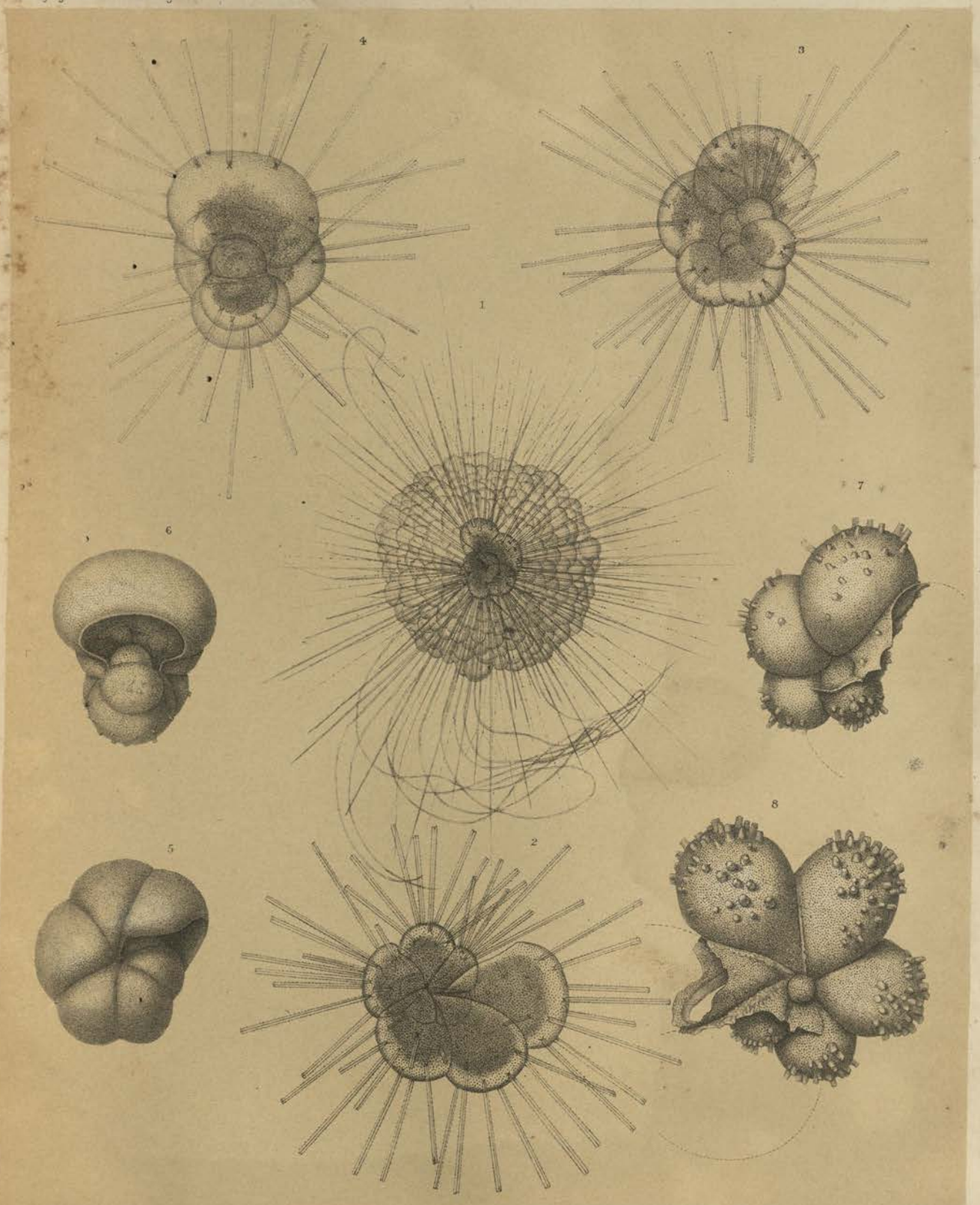
Hanhart imp.

PLATE LXXXIII

PLATE LXXXIII.

HASTIGERINA.

		Diam.	Page
Figures 1–8.—*Hastigerina pelagica*, d'Orbigny, sp.,			613.
Fig. 1.	Living specimen; the spinous shell enveloped in a lobulated mass of sarcode, with pseudopodia extended. From a drawing by Mr. Wild,	× 43	
Fig. 2.	From a fresh specimen, drawn by Mr. Wild,	× 47	
Figs. 3, 4.	From specimens mounted in glycerine,	× 50	
Figs. 5–8.	Dead and empty shells, in the worn and broken condition in which they are usually found in bottom-dredgings,	× 50	



J.J.Wild & A.T.Hollick, ad nat. del. A.T.Hollick lith.

HASTIGERINA.

Hanhart imp.

PLATE LXXXIV.

PLATE LXXXIV.

Sphæroidina.—Pullenia.

		Diam.	Page
Figures 1–7.—*Sphæroidina bulloides*, d'Orbigny, . .	×	50	620

Figs. 1–4, 6, 7. Specimens of various forms, in different aspects.
Fig. 5. Section of the shell, showing the laminated condition of the walls.

,, 8–11.—*Sphæroidina dehiscens*, Parker and Jones, .	×	50	621

Figs. 8, 9. Bottom specimens.
Fig. 10. Surface specimen.
Fig. 11. Section of the shell, showing the thickness of the walls and their coarse tubulation.

,, 12, 13.—*Pullenia sphæroides*, d'Orbigny, sp., .	×	50	615

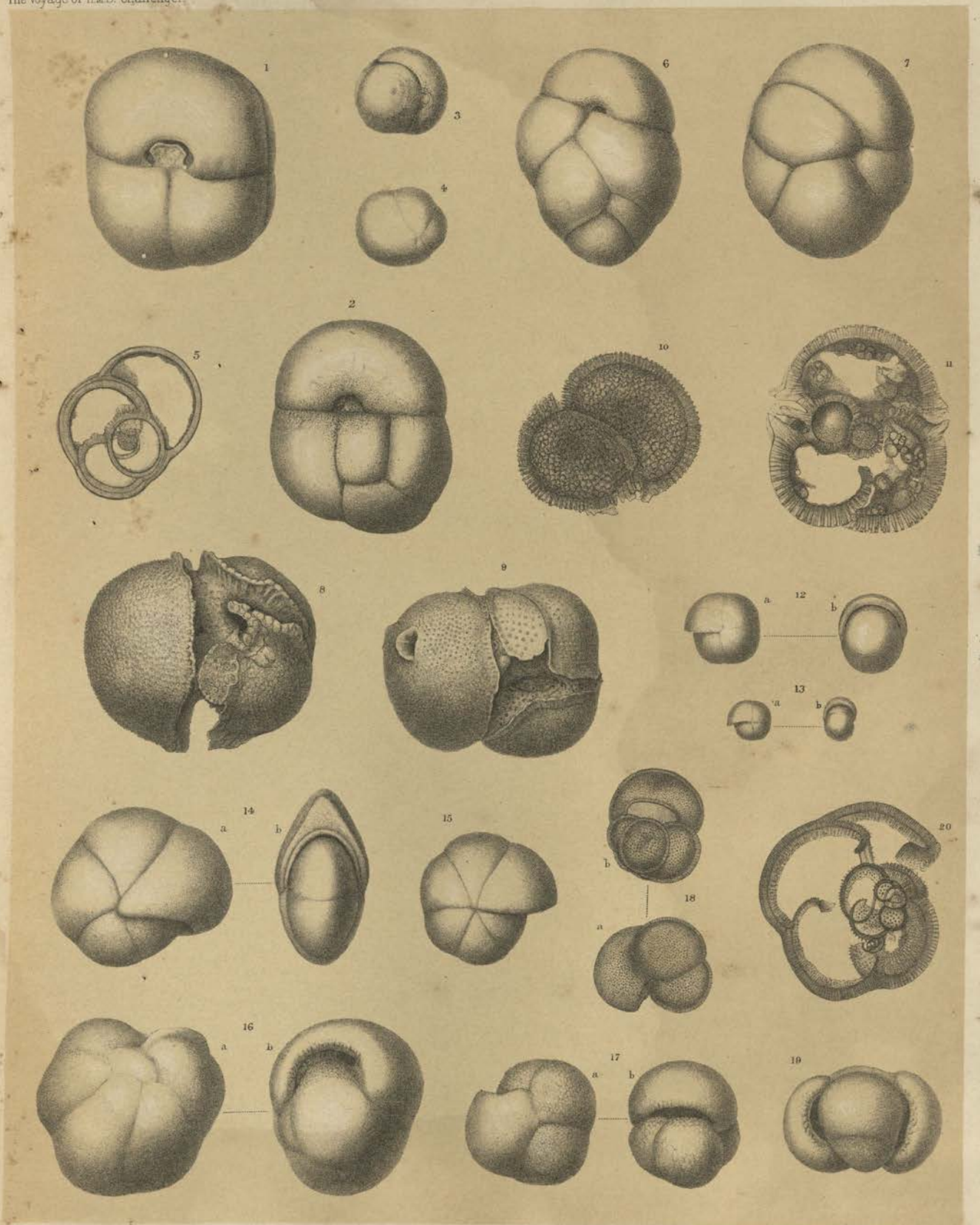
a, *a*, Lateral aspect; *b*, *b*, peripheral aspect.

,, 14, 15.—*Pullenia quinqueloba*, Reuss, . . .	×	50	617

Figs. 14 *a*, 15. Lateral aspect; fig. 14 *b*, peripheral aspect.

,, 16–20.—*Pullenia obliquiloculata*, Parker and Jones, .	×	50	618

Figs. 16, 17. Bottom specimens. *a*, *a*, Lateral aspect *b*, *b*, peripheral aspect.
Fig. 18. Surface specimen.
Fig. 19. Monstrous example, isomorphous with *Globigerina helicina*.
Fig. 20. Section of the shell, showing the thickness and tubulation of the walls, and the infolding of the superior margin of the septal apertures.



A.T. Holbek ad nat. del. et lith.

Hanhart imp.

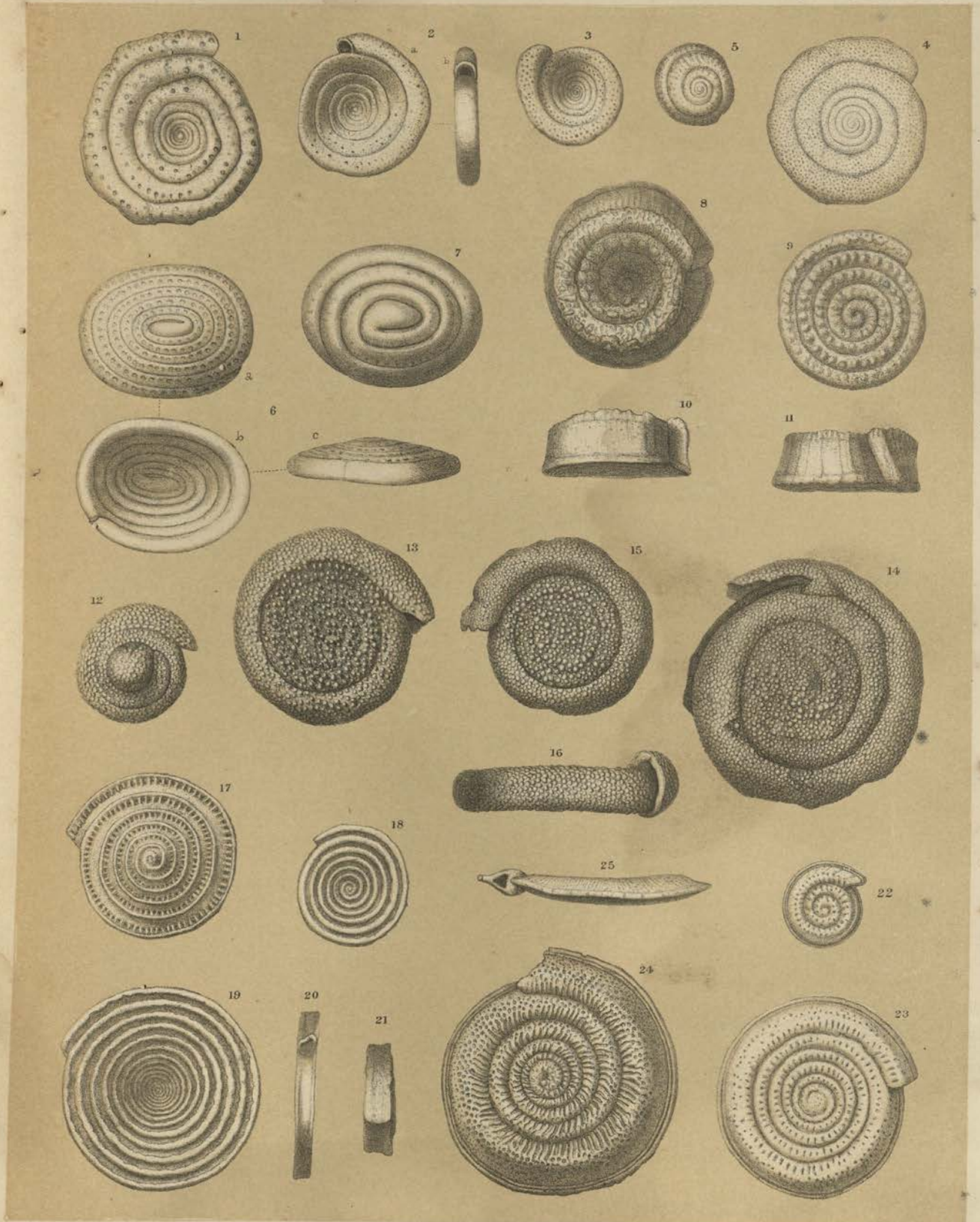
SPHÆROIDINA — PULLENIA.

PLATE LXXXV.

PLATE LXXXV.

SPIRILLINA.

		Diam.	Page
Figures 1–5.—*Spirillina vivipara*, Ehrenberg, . .	×	100	630
Figs. 1, 2 *a*, 3–5. Lateral aspect; fig. 2 *b*, peripheral aspect.			
„ 6, 7.—*Spirillina obconica*, Brady, ...	×	120	630
Figs. 6 *a*, 7. Superior lateral aspect; fig. 6 *b*, inferior aspect; fig. 6 *c*, peripheral aspect.			
„ 8–11.—*Spirillina inæqualis*, Brady, . . .	×	120	631
Fig. 8. Superior aspect; fig. 9, inferior aspect; figs. 10, 11, peripheral aspect.			
„ 12–16.—*Spirillina tuberculata*, Brady, ...			631
Fig. 12. Young specimen, lateral aspect, . .	×	50	
Figs. 13, 15. Adult specimens, lateral aspect, .	×	50	
Fig 14. Large example. The partially broken shell exposing a thread of nearly black dried sarcode, ...	×	45	
Fig. 16. Peripheral aspect, . . .	×	45	
„ 17.—*Spirillina limbata*, var. *denticulata*, nov., .	×	50	632
Lateral aspect.			
„ 18–21.—*Spirillina limbata*, Brady, ...			632
Fig. 18. Lateral aspect; fig. 21, peripheral aspect, .	×	60	
Fig. 19. Lateral aspect; fig. 20, peripheral aspect, .	×	50	
„ 22–25.—*Spirillina decorata*, n. sp., . . .	×	50	633
Figs. 22–24. Lateral aspect; fig. 25, peripheral aspect.			



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SPIRILLINA.

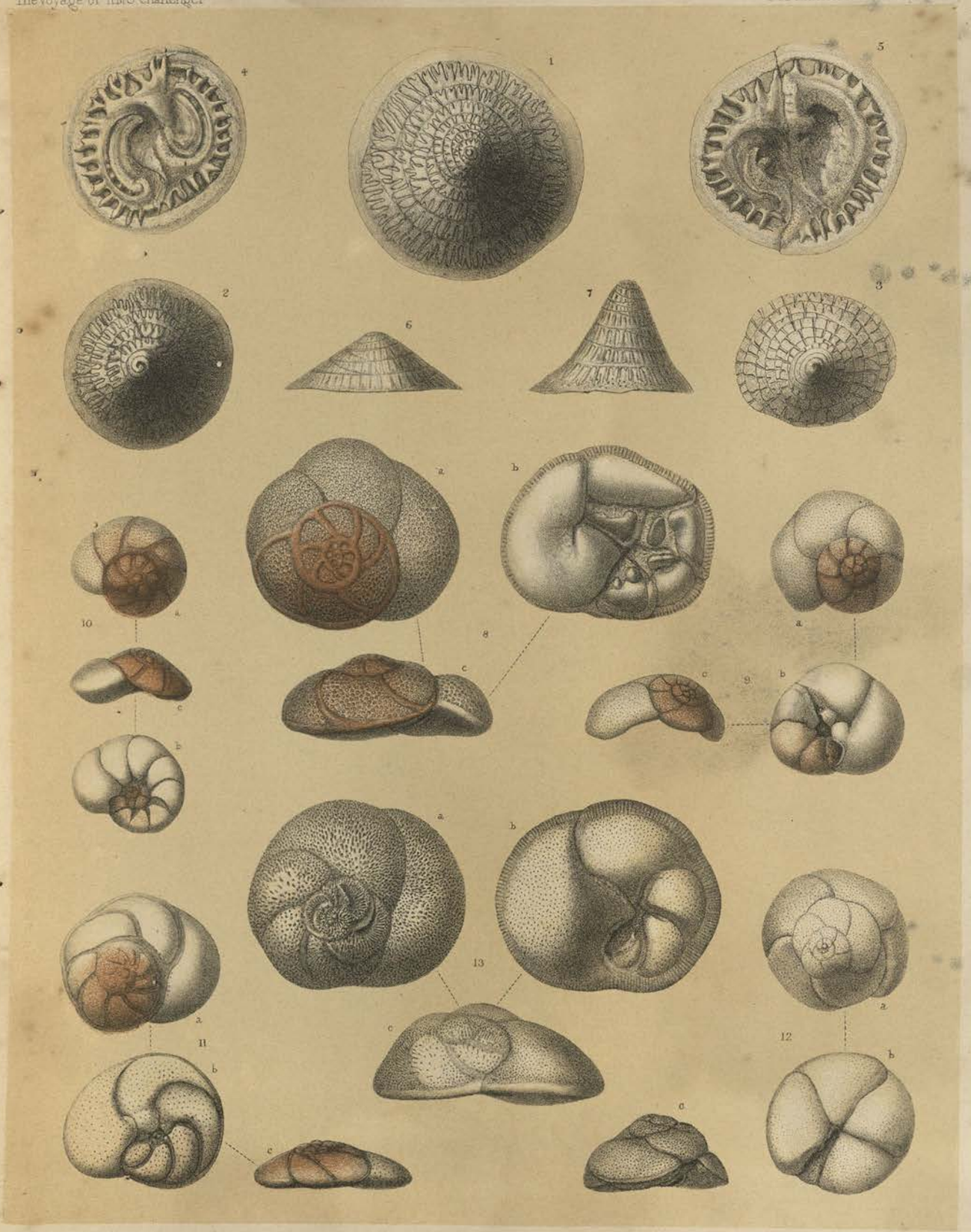
Hanhart imp.

PLATE LXXXVI.

PLATE LXXXVI.

Patellina.—Discorbina.

		Diam.	Page
Figures 1–7.—*Patellina corrugata*, Williamson, ...			634
Figs. 1–3. Superior aspect; figs. 4, 5, inferior aspect,	×	120	
Figs. 6, 7. Peripheral aspect (small specimens), . .	×	150	
„ 8, 13.—*Discorbina globularis*, d'Orbigny, sp., . . .			643
Fig. 8. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	×	75	
Fig. 13. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	×	50	
„ 9, 12.—*Discorbina vilardeboana*, d'Orbigny, sp., . .	×	75	645
a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
„ 10, 11.—*Discorbina araucana*, d'Orbigny, sp., . .	×	75–90	645
a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			



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Hanhart. imp.

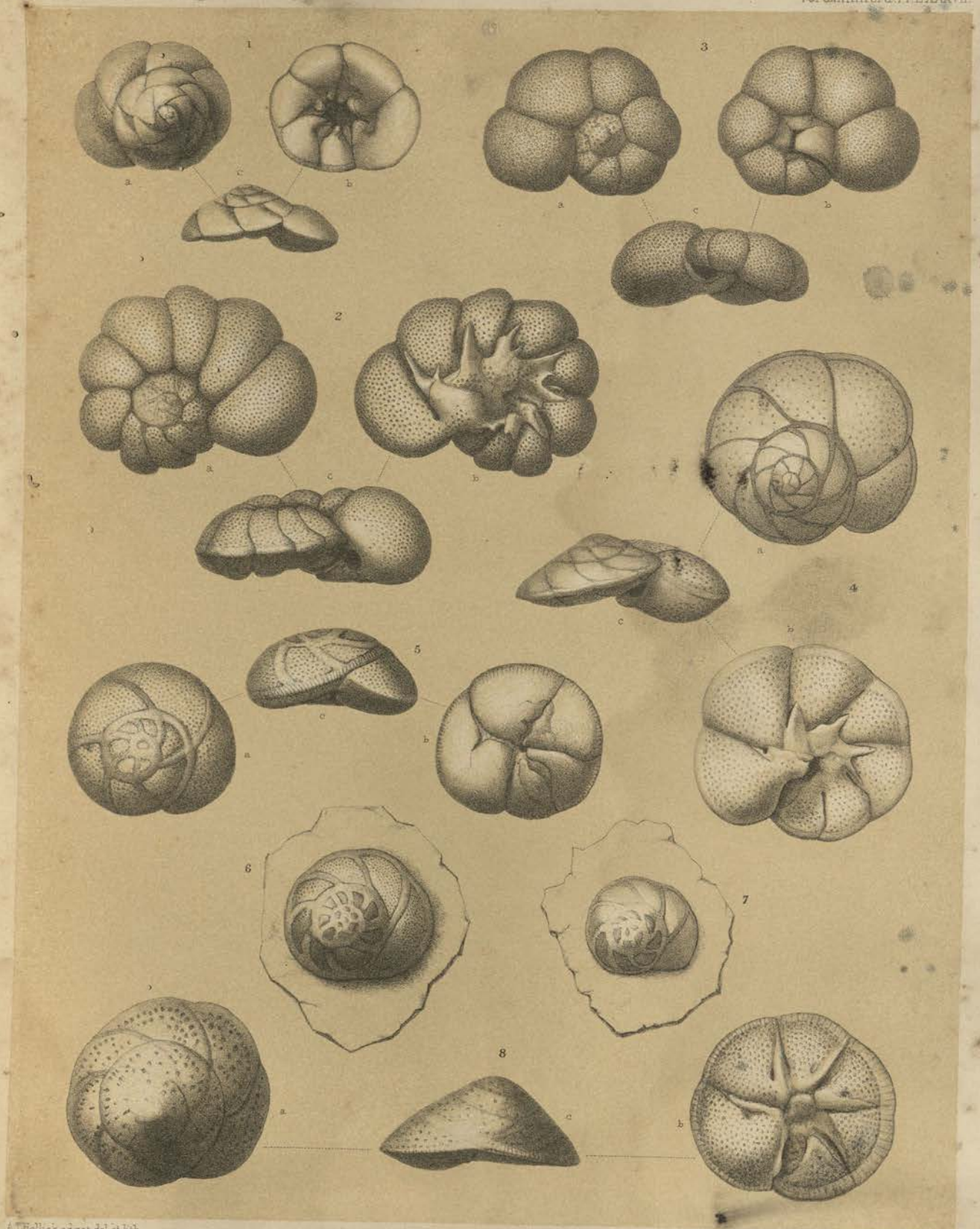
PATELLINA — DISCORBINA.

PLATE LXXXVII.

PLATE LXXXVII.

Discorbina.

		Diam.	Page
Figures 1, 4.	—*Discorbina rosacea*, d'Orbigny, sp., . . .		644
	Fig. 1. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	× 100	
	Fig. 4. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	× 50	
,, 2.	—*Discorbina vesicularis*, Lamarck, sp., .. .	× 35	651
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 3.	—*Discorbina rugosa*, d'Orbigny, sp., . .	× 60	652
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 5–7.	—*Discorbina valvulata*, d'Orbigny, sp., . . .		644
	Fig. 5. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	× 75	
	Figs. 6, 7. Small adherent specimens, . .	× 100	
,, 8.	—*Discorbina turbo*, d'Orbigny, sp., . . .	× 60	642
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		



A. T. Bolliek ad nat. del. et lith.

DISCORBINA.

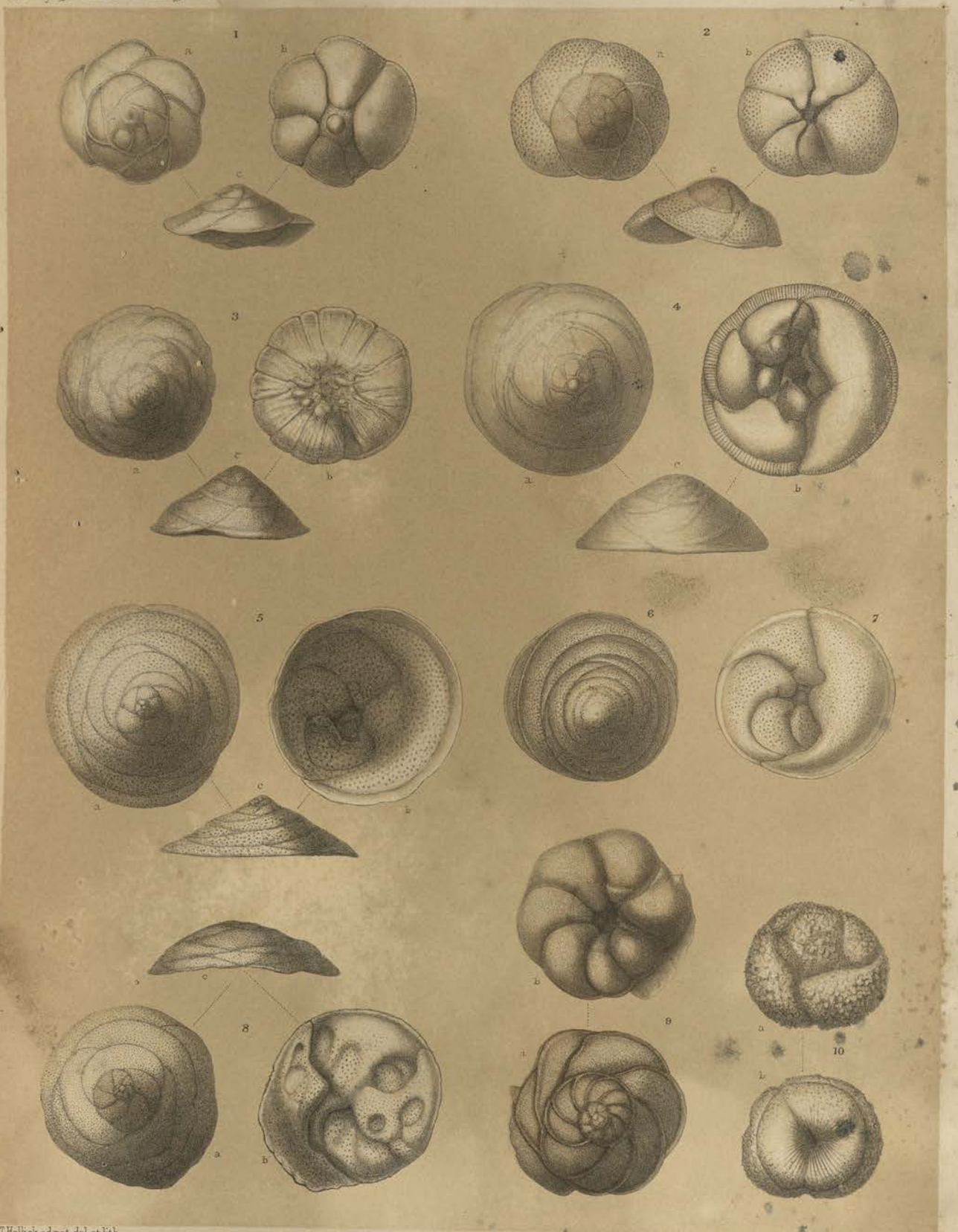
Hanhart imp.

PLATE LXXXVIII.

PLATE LXXXVIII.

Discorbina.

		Diam.	Page
Figure	1.—*Discorbina isabelleana*, d'Orbigny, sp., . .	× 100	646
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,,	2.—*Discorbina vilardeboana*, d'Orbigny, sp., .	× 100	645
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,,	3.—*Discorbina patelliformis*, n. sp., . . .	× 100	647
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,,	4–8.—*Discorbina orbicularis*, Terquem, sp., . . .		647
	Figs. 4 *a*, 5 *a*, 6, 8 *a*. Superior aspect; figs. 4 *b*, 5 *b*, 7, 8 *b*, inferior aspect; figs. 4 *c*, 5 *c*, 8 *c*, peripheral aspect.		
	Fig. 4, × 90 diam.; fig. 5, × 100 diam.; fig. 6, × 50 diam.; fig. 7, × 75 diam.; fig. 8, × 60 diam.		
,,	9.—*Discorbina eximia*, Hantken, . . .	× 50	646
	a, Superior aspect; *b*, inferior aspect.		
,,	10.—*Discorbina pulvinata*, n. sp., . . .	× 100	650
	a, Superior aspect; *b*, inferior aspect.		



A.T.Hollick ad nat. del. et lith.

DISCORBINA.

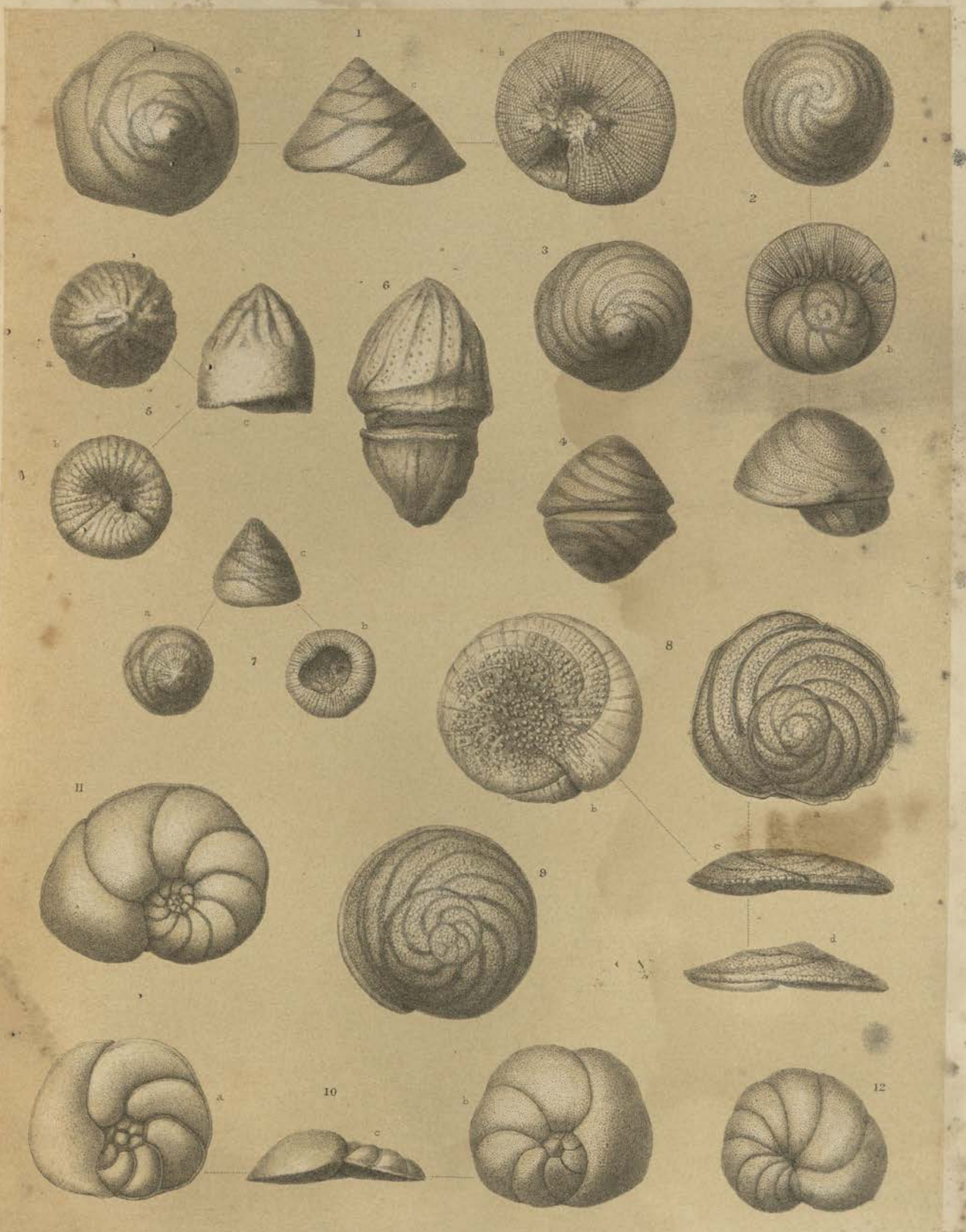
Hanhart Imp

PLATE LXXXIX.

PLATE LXXXIX.

Discorbina.

		Diam.	Page
Figure 1.—*Discorbina patelliformis*, n. sp., . .	× 100		647
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 2–4.—*Discorbina pileolus*, d'Orbigny, sp., . .	× 100		649
Figs. 2 *a*, 3. Superior aspect; fig. 2 *b*, inferior aspect; figs. 2 *c*, 4, peripheral aspect.			
Fig. 2, 4. Double specimens.			
,, 5–7.—*Discorbina tabernacularis*, Brady, . .	× 100		648
Figs. 5 *a*, 7 *a*. Superior aspect; figs. 5 *b*, 7 *b*, inferior aspect; figs. 5 *c*, 7 *c*, peripheral aspect.			
Fig. 6. Double specimen.			
,, 8, 9.—*Discorbina opercularis*, d'Orbigny, sp., . .	× 100		650
Figs. 8 *a*, 9. Superior aspect; *b*, inferior aspect; *c*, *d*, peripheral aspect.			
,, 10–12.—*Discorbina bertheloti*, d'Orbigny, sp., . . .			650
Fig. 10 *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	× 90		
Fig. 11. Superior aspect, ...	× 60		
Fig. 12. Inferior aspect, ...	× 100		



A.T. Hollick ad nat. del. et lith.

DISCORBINA.

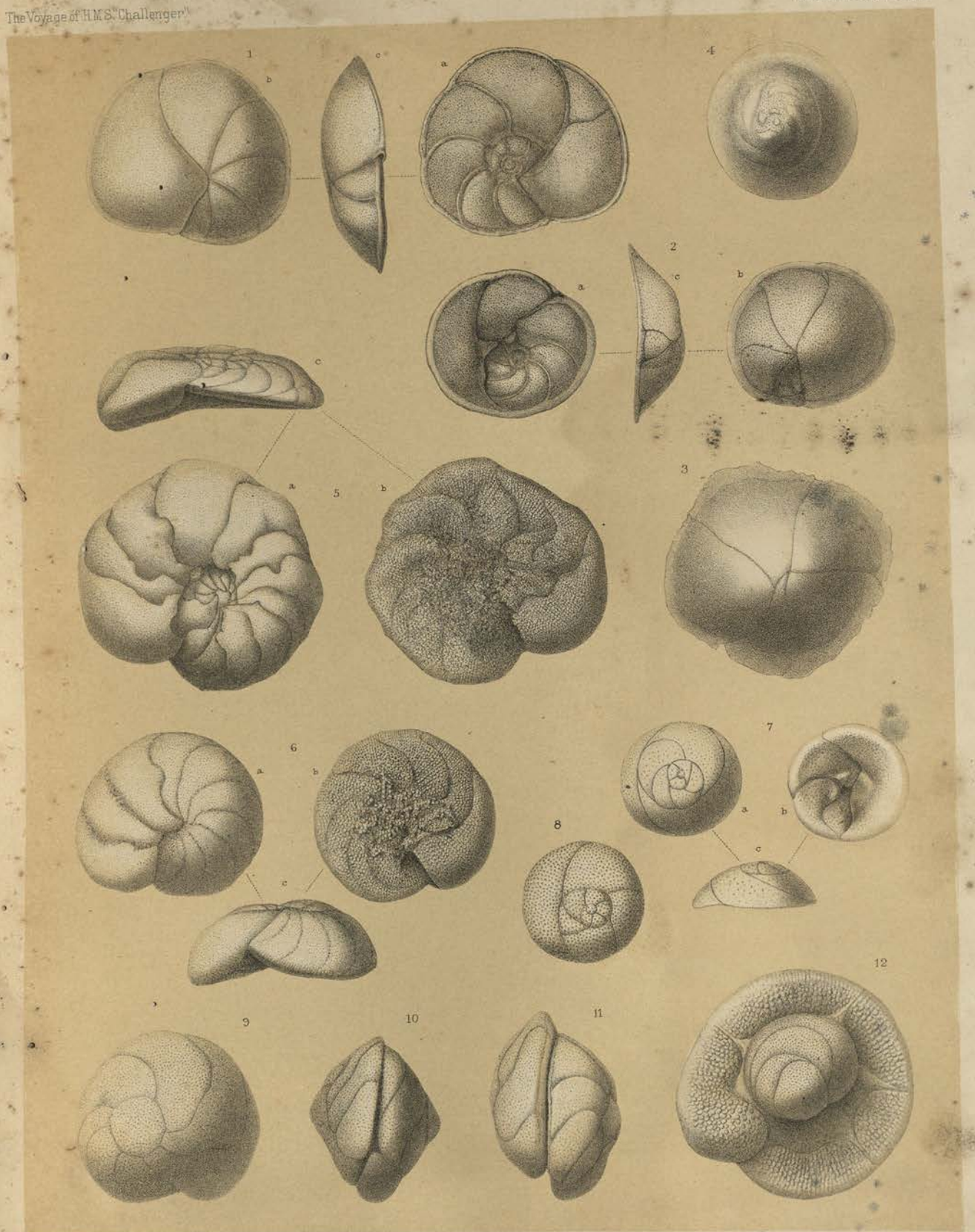
Hanhart imp.

PLATE XC.

PLATE XC.

Discorbina.

		Diam.	Page
Figure 1.	—*Discorbina bertheloti*, var. *baconica*, Hantken, var., ...	× 75	651
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 2, 3.	—*Discorbina rarescens*, ...	× 75	651
	Fig. 2 *a*. Superior aspect; figs. 2 *b*, 3, inferior aspect; fig. 2 *c*, peripheral aspect.		
,, 4.	—*Discorbina*,—carinate form possibly related to the last-named species, . . .	× 100	651
,, 5, 6, 9–12.	—*Discorbina parisiensis*, d'Orbigny, sp., . .		648
	Figs. 5 *a*, 6 *a*, 9, Superior aspect; figs. 5 *b*, 6 *b*, inferior aspect; figs. 5 *c*, 6 *c*, peripheral aspect.		
	Figs. 10–12, Double specimens.		
	Figs. 5, 6, × 40 diam.; figs. 9, 12, × 90 diam.; figs. 10, 11, ...	× 100	
,, 7, 8.	—*Discorbina concinna*, n. sp., . . .	× 100	646
	Figs. 7 *a*, 8. Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		



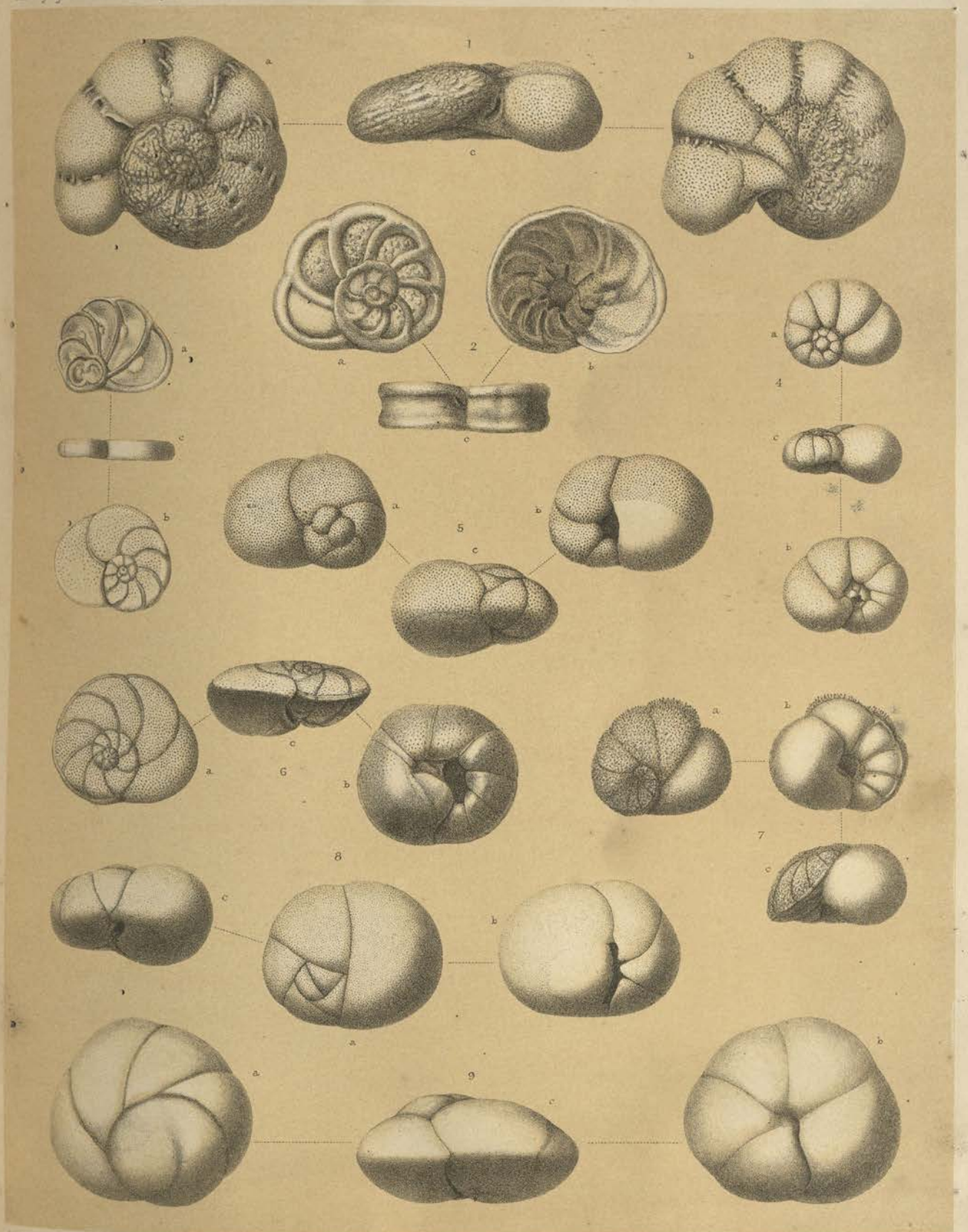
DISCORBINA.

PLATE XCI.

PLATE XCI.

DISCORBINA.

		Diam.	Page
Figure 1.—*Discorbina polystomelloides*, Parker and Jones, .	×	30	652
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 2, 3.—*Discorbina biconcava*, Parker and Jones, . .	×	60	653
Figs. 2 *a*, 3 *b*, Superior aspect; figs. 2 *b*, 3 *a*, inferior aspect; 2 *c*, 3 *c*, peripheral aspect.			
,, 4.—*Discorbina rugosa*, d'Orbigny, sp., . . .	×	90	652
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 5, 8.—*Discorbina allomorphinoides*, Reuss, sp., . . .			654
Fig. 5. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, . . .	×	100	
Fig. 8. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	×	50	
,, 6.—*Discorbina saulcii*, d'Orbigny, sp., . .	×	50	653
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 7.—*Discorbina ventricosa*, n. sp., . . .	×	50	654
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 9.—*Discorbina obtusa* (?), d'Orbigny, sp., . .	×	50	644
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			



A.T. Hollick, ad nat. del. et lith. Hanhart. imp.

DISCORBINA.

PLATE XCII.

PLATE XCII.

PLANORBULINA.—TRUNCATULINA.

			Diam.	Page
Figures 1–3.	*Planorbulina mediterranensis*, d'Orbigny, .	×	35–45	656
	Fig. 2 *a*, Superior (attached) lateral aspect; figs. 1, 2 *b*, 3, inferior (free) aspect; fig. 2 *c*, peripheral aspect.			
,, 4.	*Planorbulina acervalis*, n. sp., . . .	×	35	657
,, 5, 6.	*Planorbulina larvata*, Parker and Jones, . .	×	35	658
	Fig. 5. Adherent specimen.			
	Fig. 6. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 7–9.	*Truncatulina refulgens*, Montfort, sp., . .	×	30	659
	Figs. 7, 8. *a*,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
	Fig. 9. Monstrous specimen.			
,, 10.	*Truncatulina lobatula*, Walker and Jacob, sp., .	×	60	660
	Small adherent specimen.			

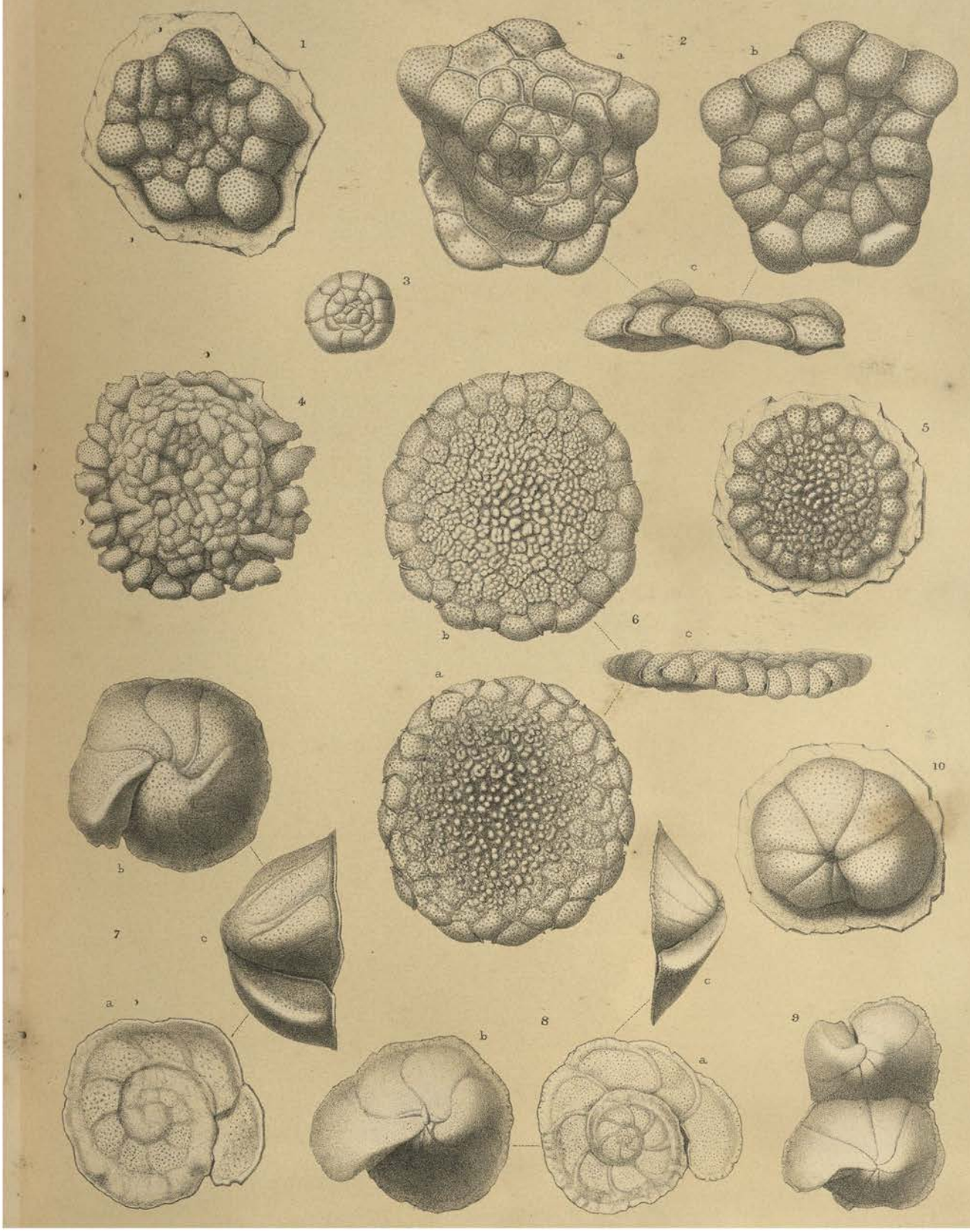
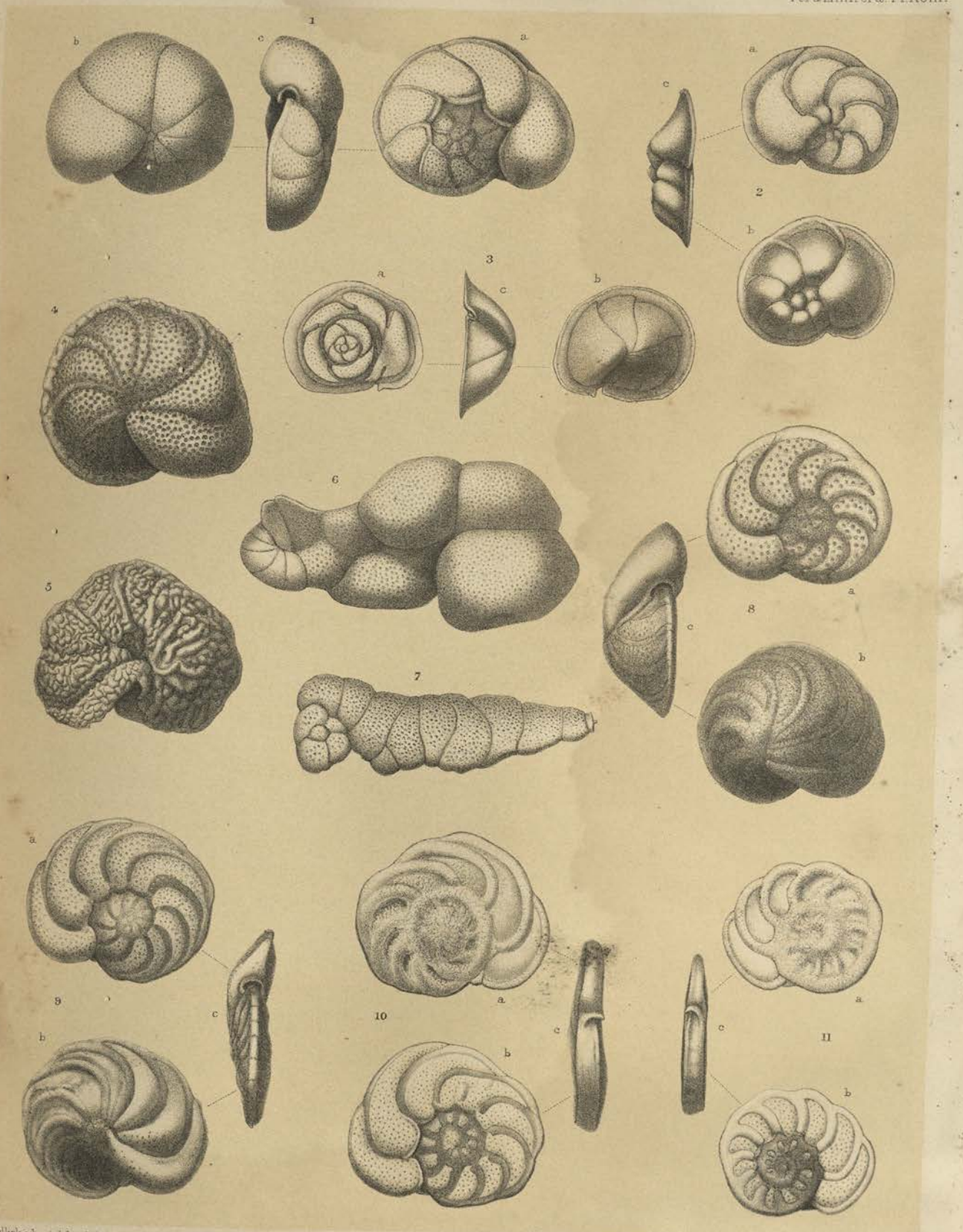

1
2
a
b
c
3
4
5
6
b
c
a
7
b
c
a
8
b
a
c
9
10

PLATE XCIII.

PLATE XCIII.

TRUNCATULINA.—ANOMALINA.

		Diam.	Page
Figures 1, 4, 5.—*Truncatulina lobatula*, Walker and Jacob, sp., . .			660
Fig. 1. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, ...	×	60	
Figs. 4, 5. Old thick-shelled specimens; inferior aspect,	×	40	
,, 2, 3.—*Truncatulina tenuimargo*, n. sp., . .	×	60–100	662
a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
,, 6, 7.—*Truncatulina variabilis*, d'Orbigny, . .	×	50	661
,, 8, 9.—*Truncatulina wuellerstorfi*, Schwager, sp., .	×	50–60	662
a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
,, 10, 11.—*Anomalina ariminensis*, d'Orbigny, sp., .	×	55–60	674
a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			



A.T. Hollick ad nat. del. et lith.

PLANORBULINA (Truncatulina).

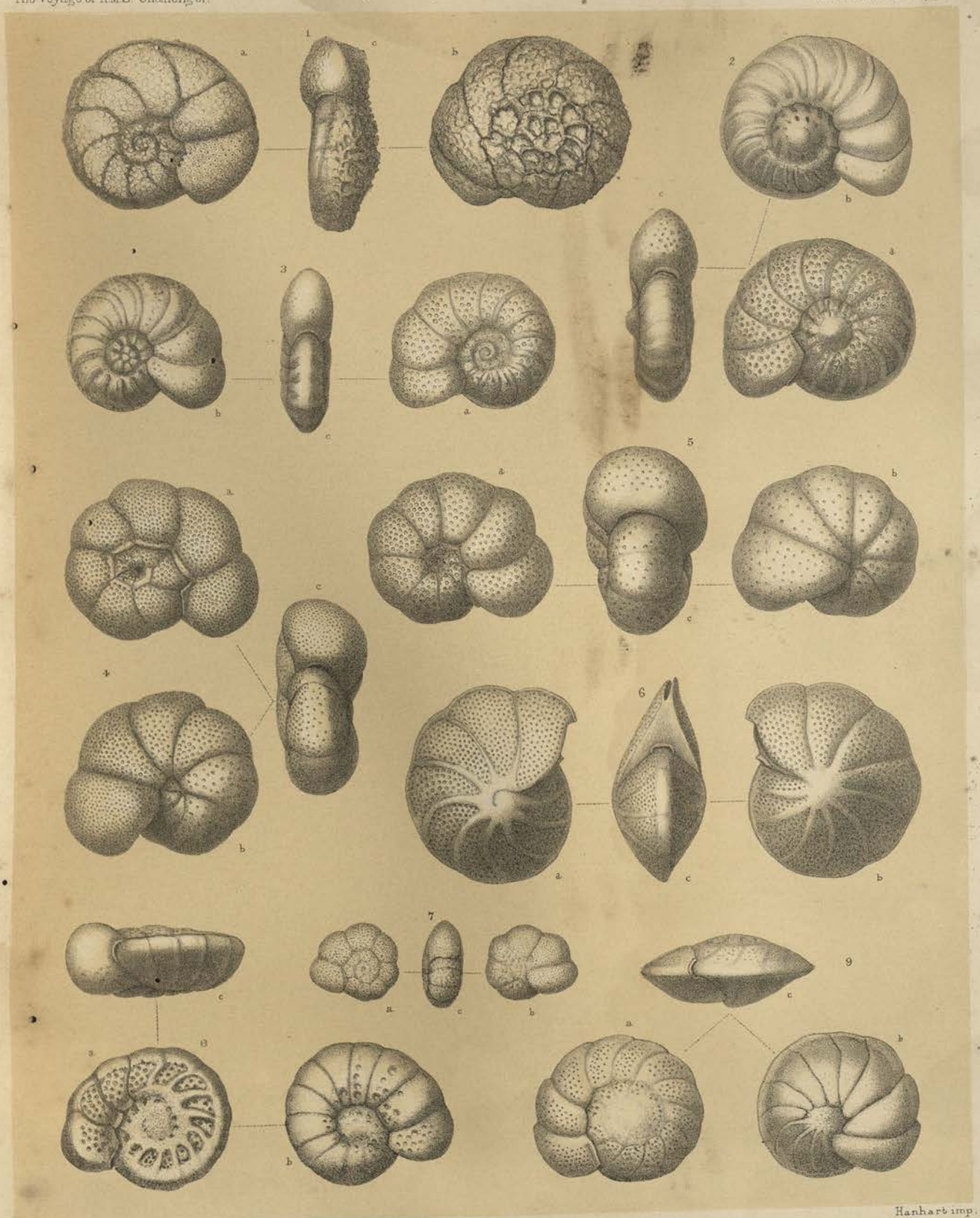
Hanhart. imp.

PLATE XCIV.

PLATE XCIV.

TRUNCATULINA.—ANOMALINA.

			Diam.	Page
Figure	1.—*Anomalina foveolata*, n. sp.,	×	60	674
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	2, 3.—*Anomalina ammonoides*, Reuss, sp.,			672
	Fig. 2, × 55 diam.;—fig. 3,	×	90	
	a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
,,	4, 5.—*Anomalina grosserugosa*, Gümbel, sp.,	×	40–45	673
	a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			
,,	6.—*Truncatulina rostrata*, Brady,	×	50	668
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	7.—*Truncatulina humilis*, n. sp.,	×	100	665
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	8.—*Truncatulina akneriana*, d'Orbigny, sp.,	×	45	663
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	9.—*Truncatulina ungeriana*, d'Orbigny, sp.,	×	35	664
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			



A.T.Hollick ad nat. del. et lith.

Hanhart imp.

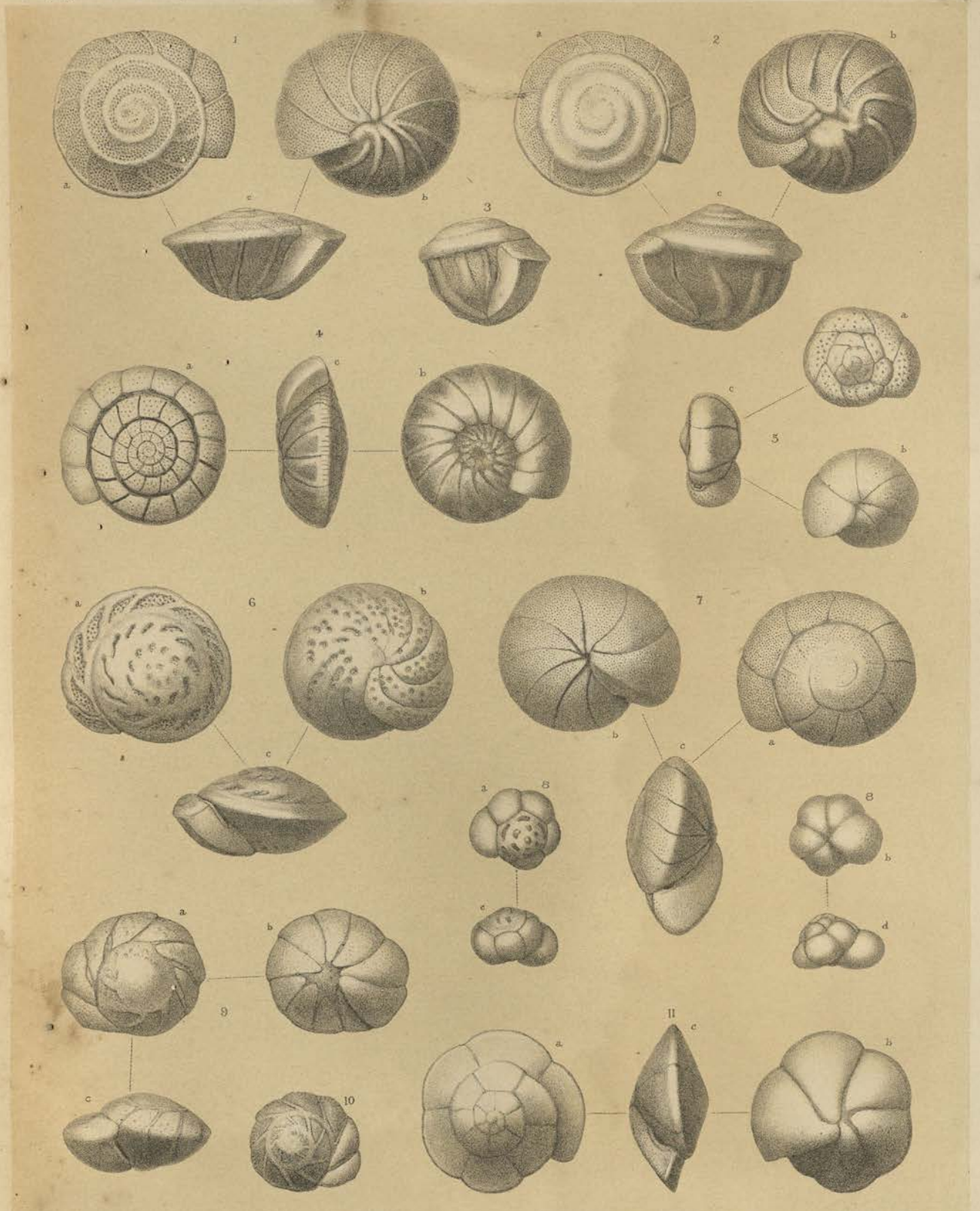
PLANORBULINA (Truncatulina-Anomalina.)

PLATE XCV.

PLATE XCV.

TRUNCATULINA.

			Diam.	Page
Figures 1–3.	—*Truncatulina præcincta*, Karrer, sp., . . .			667
	Figs. 1, 2. *a,a*, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect, . . .	×	30	
	Fig. 3. Young specimen, . . .	×	35	
,, 4.	—*Truncatulina robertsoniana*, Brady, . .	×	50	664
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 5.	—*Truncatulina dutemplei*, d'Orbigny, sp., .	×	60	665
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 6.	—*Truncatulina*, sp., intermediate form near *Truncatulina haidingerii*, d'Orbigny, sp., . .	×	40	
,, 7.	—*Truncatulina haidingerii*, d'Orbigny, sp., .	×	30	663
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 8.	—*Truncatulina tumidula*, n. sp., . . .	×	100	666
	a, Superior aspect; *b*, inferior aspect; *c,d*, peripheral aspect.			
,, 9, 10.	—*Truncatulina pygmæa*, Hantken, . .	×	60	666
	Figs. 9 *a*, 10. Superior aspect; fig. 9 *b*, inferior aspect; fig. 9 *c*, peripheral aspect.			
,, 11.	—*Truncatulina tenera*, n. sp., . . .	×	75	665
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			



A.T.Hollick ad nat. del. et lith.

Hanhart imp.

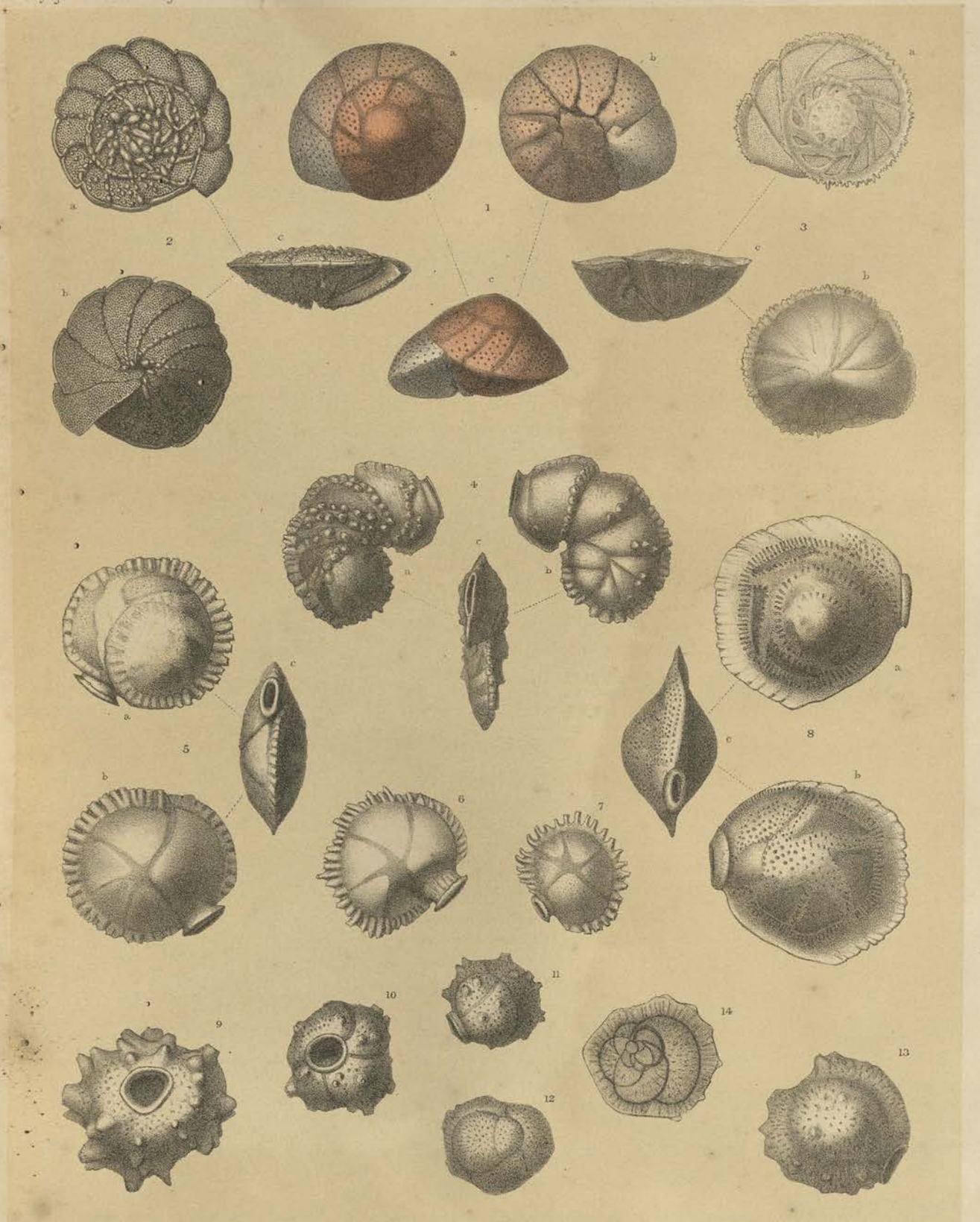
PLANORBULINA (Truncatulina.)

PLATE XCVI.

PLATE XCVI.

TRUNCATULINA.

			Diam.	Page
Figure 1.—*Truncatulina rosea*, d'Orbigny, sp., . .	×	70	667
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 2.—*Truncatulina margaritifera*, Brady, . .	×	28	667
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 3.—*Truncatulina culter*, Parker and Jones, sp., .	×	90	668
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 4.—*Truncatulina soluta*, Brady, . . .	×	100	670
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 5–8.—*Truncatulina reticulata*, Czjzek, sp., . . .			669
Figs. 5–7, × 100 diam.;—fig. 8, . . .	×	70	
Figs. 5 *a*, 8 *a*. Superior aspect; figs. 5 *b*, 6, 7, 8 *b*, inferior aspect; figs. 5 *c*, 8 *c*, peripheral aspect.			
,, 9–14.—*Truncatulina echinata*, Brady, . . .	×	100	670
Figs. 9–13. Specimens in various aspects.			
Fig. 14. Transparent section of the test.			



A.T.Holbick ad nat. del. et lith.

Hanhart imp.

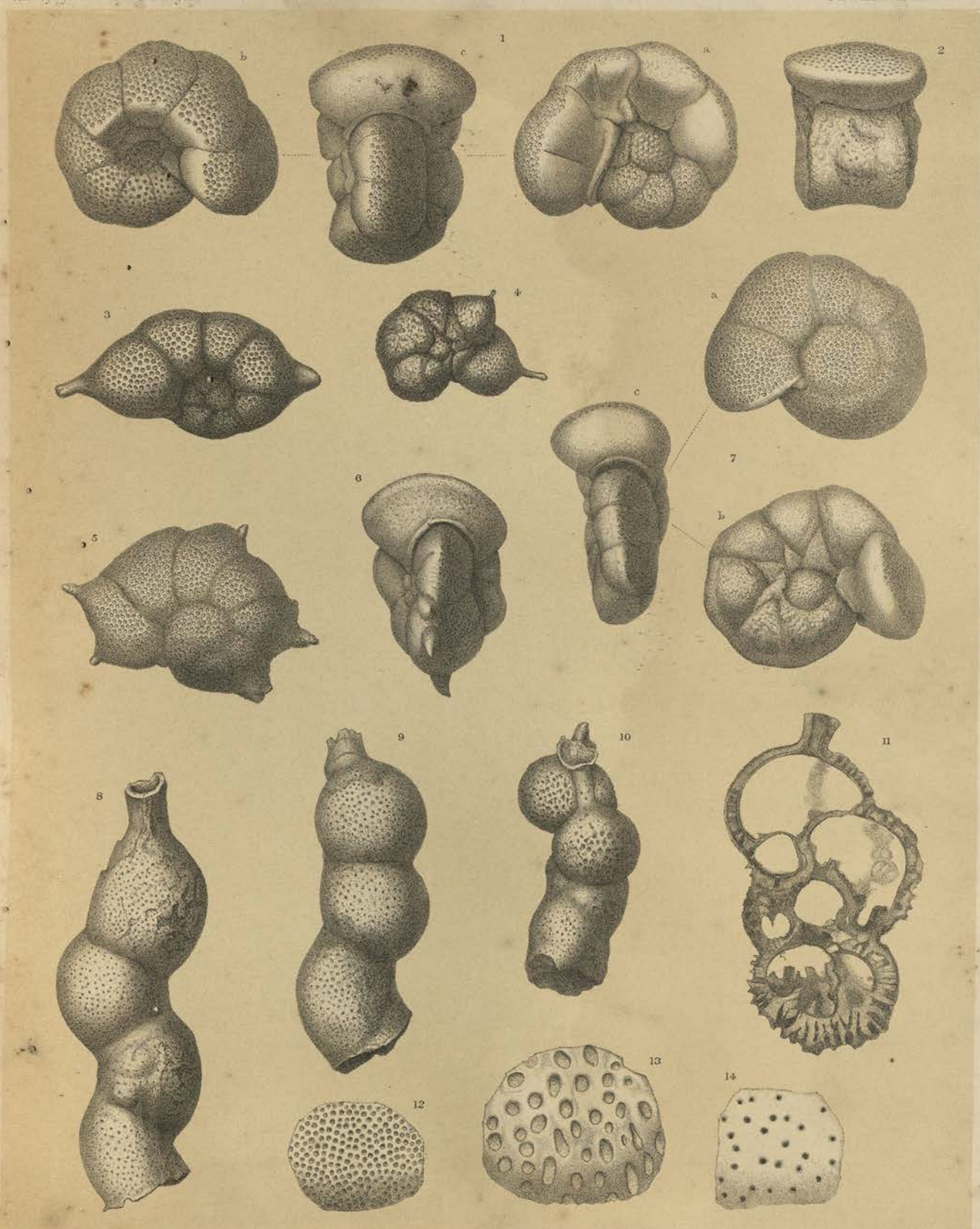
PLANORBULINA (Truncatulina).

PLATE XCVII.

PLATE XCVII.

ANOMALINA.—CARPENTERIA.

		Diam.	Page
Figures 1, 2.—*Anomalina coronata*, Parker and Jones, . . .			675
Fig. 1. *a*, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect, . . .	×	40	
Fig. 2. Peripheral aspect, . . .	×	50	
,, 3–6.—*Anomalina polymorpha*, Costa, . . .	×	35 – 45	676
Figs. 3–5. Lateral aspects; fig. 6, peripheral aspect.			
,, 7.—*Anomalina polymorpha* (?), Costa, . .	×	45	676
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 8–14.—*Carpenteria proteiformis*, Goës, ...			679
Figs. 8–10. Lateral aspect, . . .	×	15–17	
Fig. 11. Longitudinal section, not quite central; showing the arrangement of the segments and the thickness of the walls, . . .	×	18	
Figs. 12–14. Portions of the surface of different specimens, more highly magnified, . .	×	50	
(Assigned in MS. to the allied genus *Rupertia* before the publication of Dr. Goës' description.)			



A.T. Kellick ad nat. del. et lith.

PLANORBULINA (Anomalina).—RUPERTIA.

Hanhart imp.

PLATE XCVIII.

PLATE XCVIII.

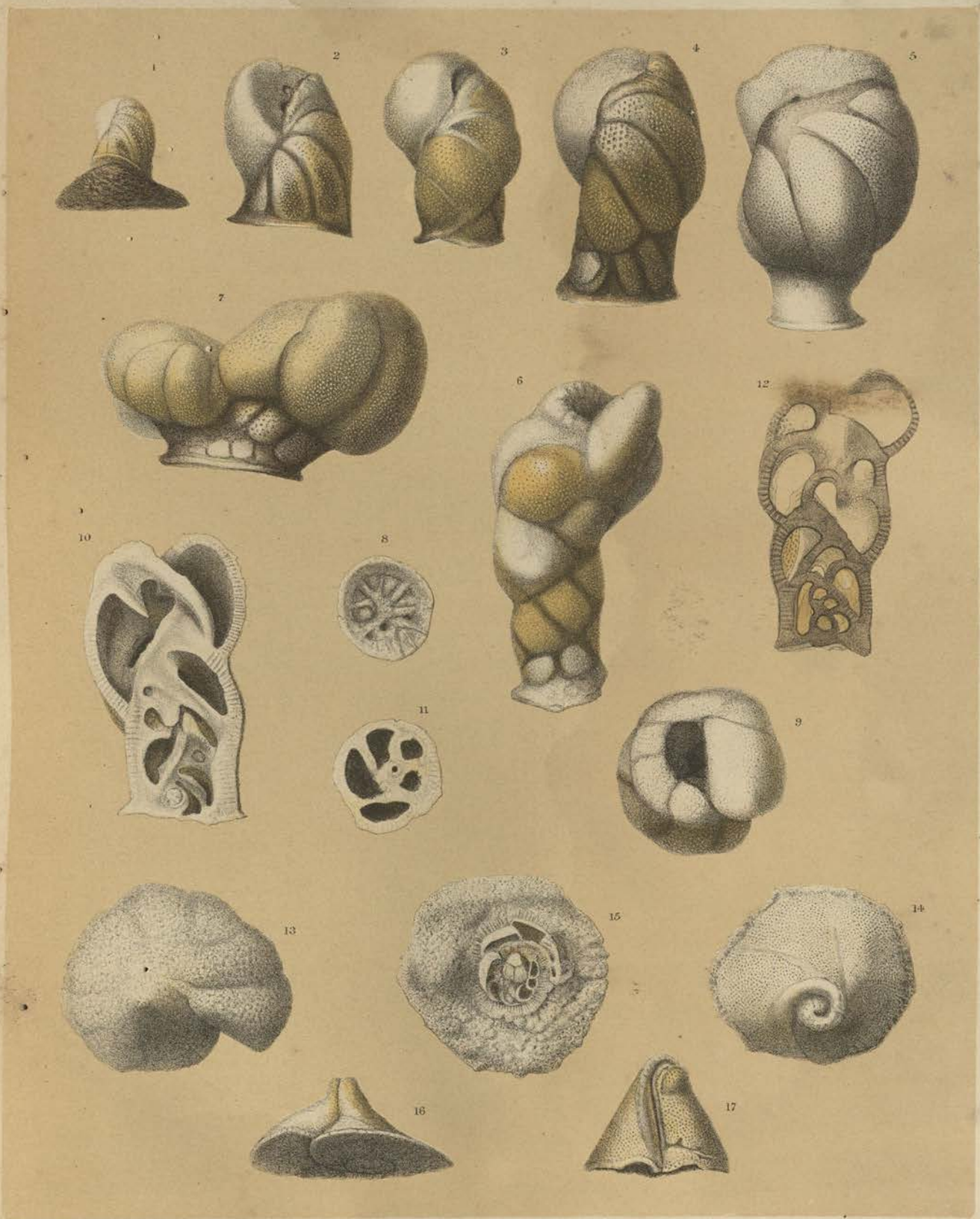
Rupertia.—Carpenteria.

		Diam	Page
Figures 1–12.—*Rupertia stabilis*, Wallich, . . .	×	40	680

Figs. 1–6. Specimens in various conditions and stages of growth; lateral aspect.
Fig. 7. Monstrous specimen.
Fig. 8. Base of the test; corresponding to the superior aspect of the Rotaliform shell.
Fig. 9. Distal aspect of the test.
Fig. 10. Specimen laid open longitudinally, to show the segmentation.
Fig. 11. Specimen laid open transversely.
Fig. 12. Longitudinal section, illustrating the general structure of the test.

„ 13–17.—Young specimens of *Carpenteria*, 677

Figs. 13, 15, 16 (*Carpenteria monticularis ?*), × 35
Figs. 14, 17 (*Carpenteria balaniformis ?*), . × 30–40



A.T.Hollick ad nat. del. et lith. Hanhart imp.

RUPERTIA — CARPENTERIA.

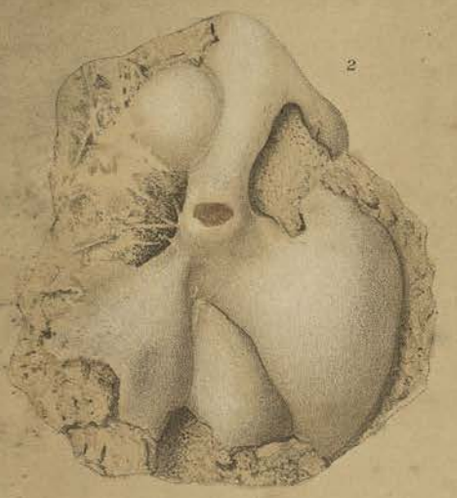
PLATE XCIX.

PLATE XCIX.

Carpenteria.

		Diam.	Page
Figures 1–5.	—*Carpenteria monticularis*, Carter, . . ×	12	677
	Fig. 5. Early stage of growth.		
„ 6, 7.	—*Carpenteria utricularis*, Carter, . . ×	15	678
	Early stages.		

1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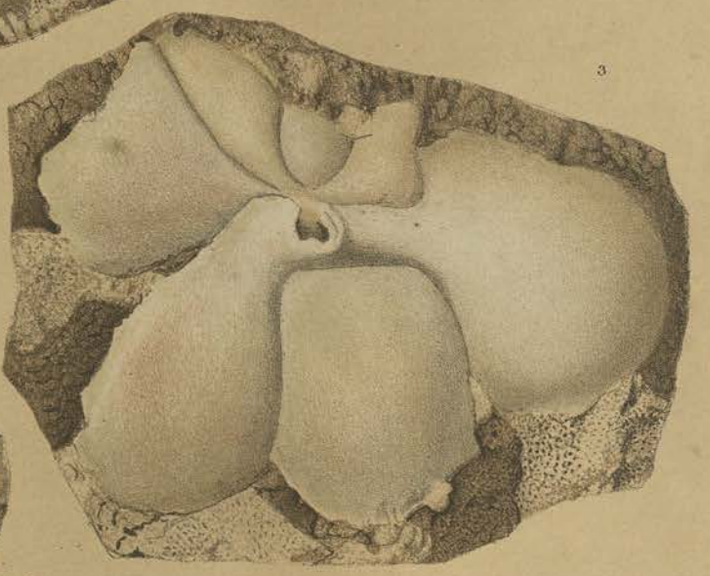
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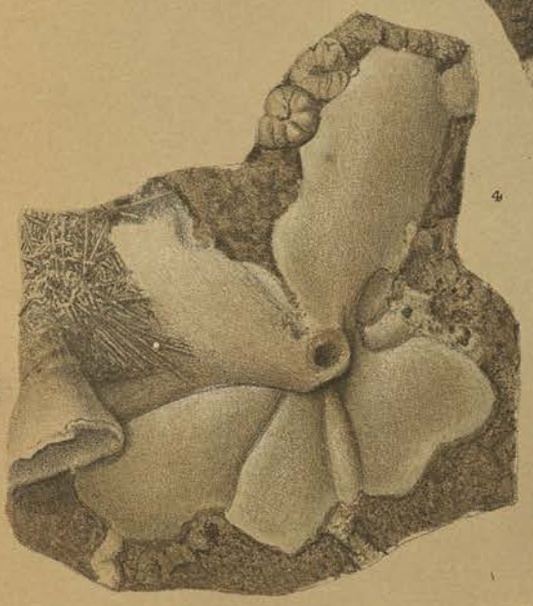
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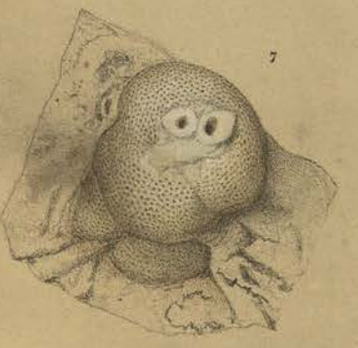
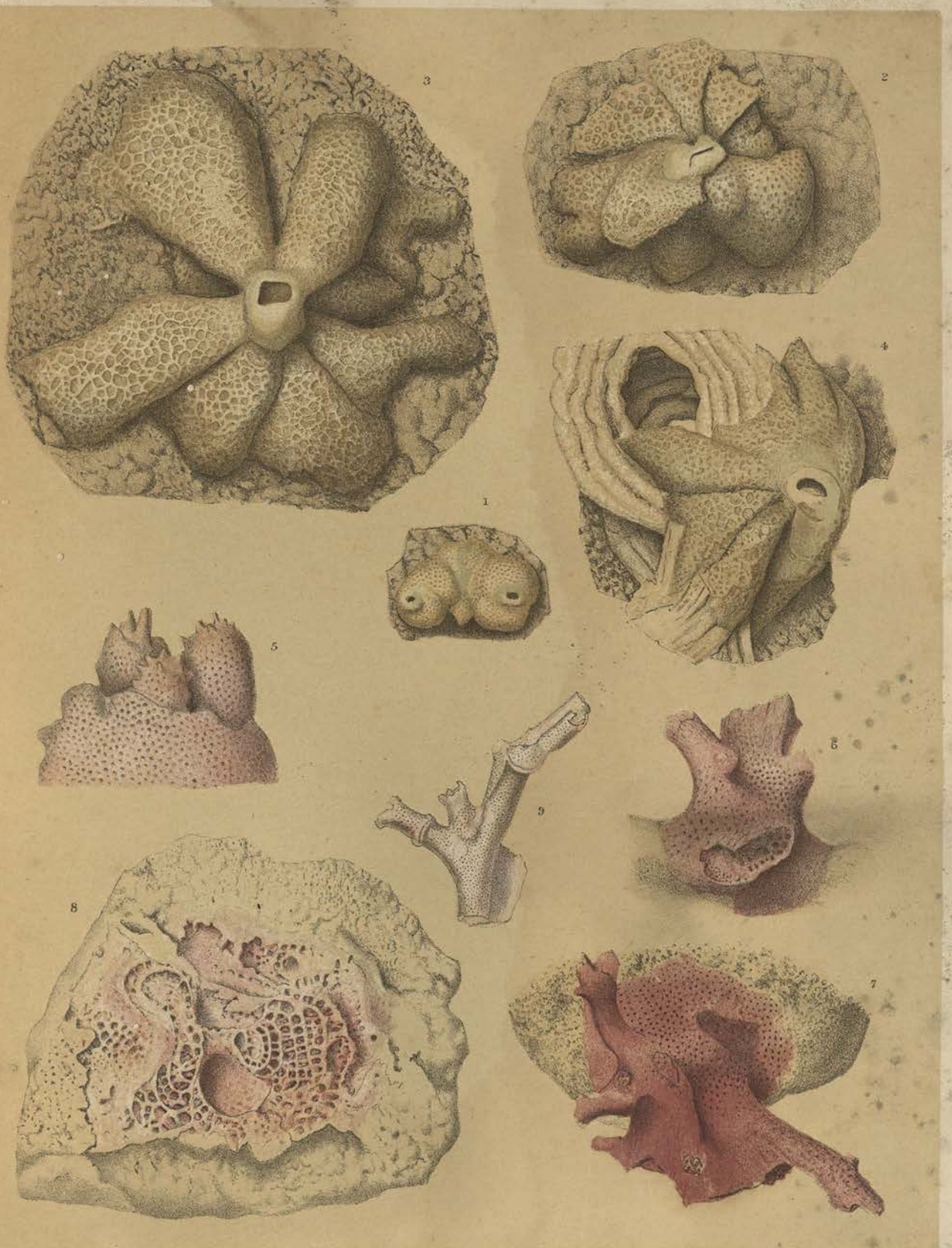

7

PLATE C.

PLATE C.

Carpenteria.—Polytrema.

			Diam.	Page
Figures 1–4.—*Carpenteria utricularis*, Carter, . . .	×	15	678
Fig. 1. Early stage; figs. 2–4, adult specimens.				
,, 5–9.—*Polytrema miniaceum*, Linné, sp., . . .				721
Figs. 5–8. Specimens illustrating the general form and structure of the test, . . .	×	20	
Fig. 9. Minute terminal branches with apertures, .	×	50	



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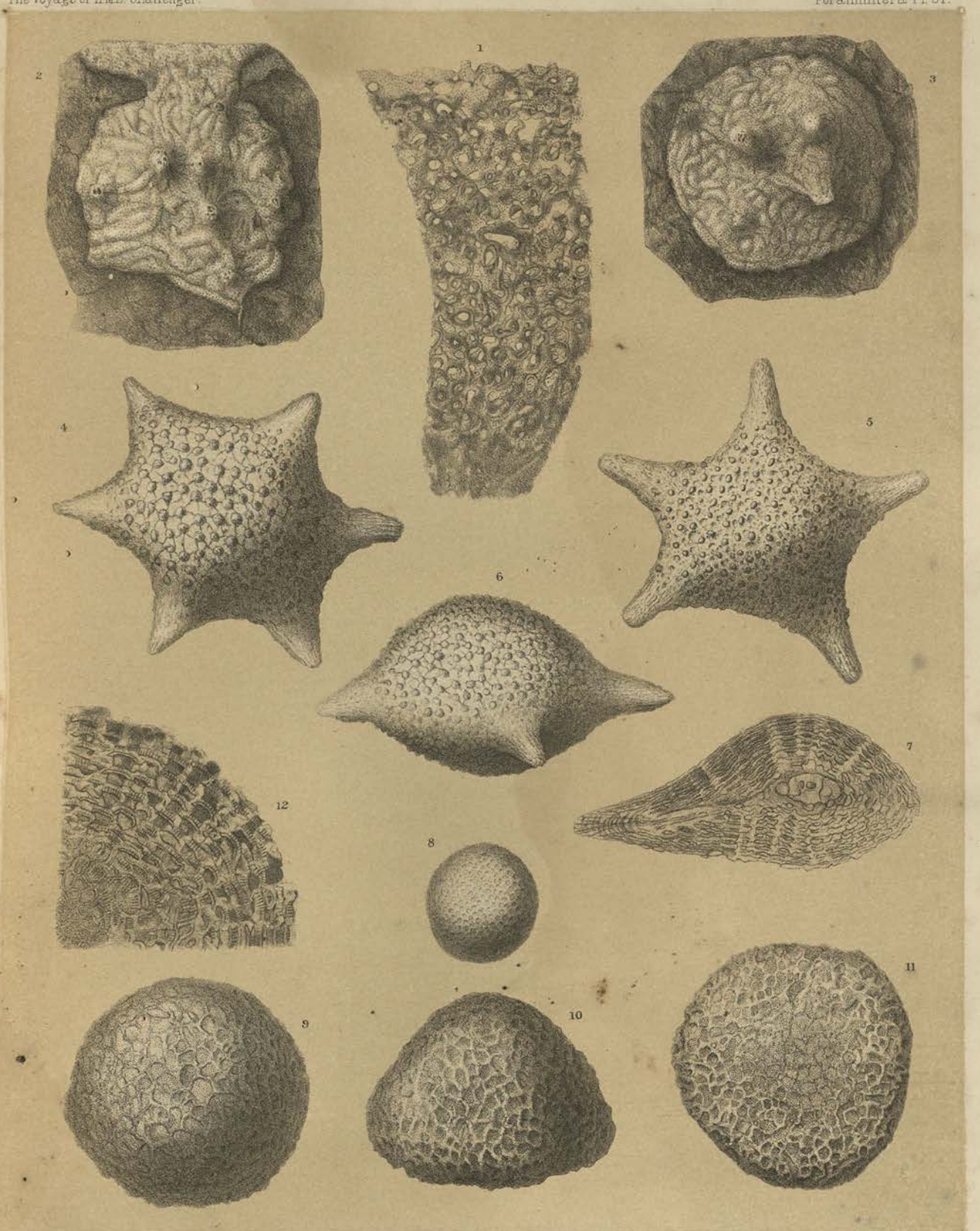
CARPENTERIA — POLYTREMA.

PLATE CI.

PLATE CI.

POLYTREMA.—TINOPORUS.—GYPSINA.

			Diam.	Page
Figure	1.—*Polytrema miniaceum*, Linné, sp.,	×	40	721
	Transparent section of the test.			
,,	2, 3.—*Polytrema miniaceum*, var. *alba*, Carter,	×	30	721
,,	4–7.—*Tinoporus baculatus* (Montfort ?) Carpenter,			716
	Figs. 4, 5. Lateral aspect; fig. 6, peripheral aspect,	×	30	
	Fig. 7. Transverse section of the test,	×	40	
,,	8.—*Gypsina globulus*, Reuss, sp.,	×	30	717
,,	9–12.—*Gypsina vesicularis*, Parker and Jones, sp.,			718
	Figs. 9–11. Various aspects of the test,	×	30	
	Fig. 12. Section, viewed by transmitted light,	×	40	



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POLYTREMA_TINOPORUS. (Tinoporus_Gypsina.)

PLATE CII.

PLATE CII.

GYPSINA.—CYMBALOPORA.

			Diam.	Page
Figures 1–6.	*Gypsina inhærens*, Schultze, sp.,	×	30–40	718

Figs. 1–3. Free surface; fig. 4, adherent surface; fig. 5, peripheral aspect; fig. 6, horizontal section of the test, viewed by transmitted light.

„ 7–12.	*Cymbalopora* (*Tretomphalus*) *bulloides*, d'Orbigny, sp.,	×	60	638

Figs. 7–10. Lateral aspect; fig. 11, superior aspect; fig. 12, inferior aspect.

Fig. 7. Is drawn from a pelagic specimen; the rest from bottom specimens.

„ 13.	*Cymbalopora poeyi*, d'Orbigny, sp.,	×	50	636

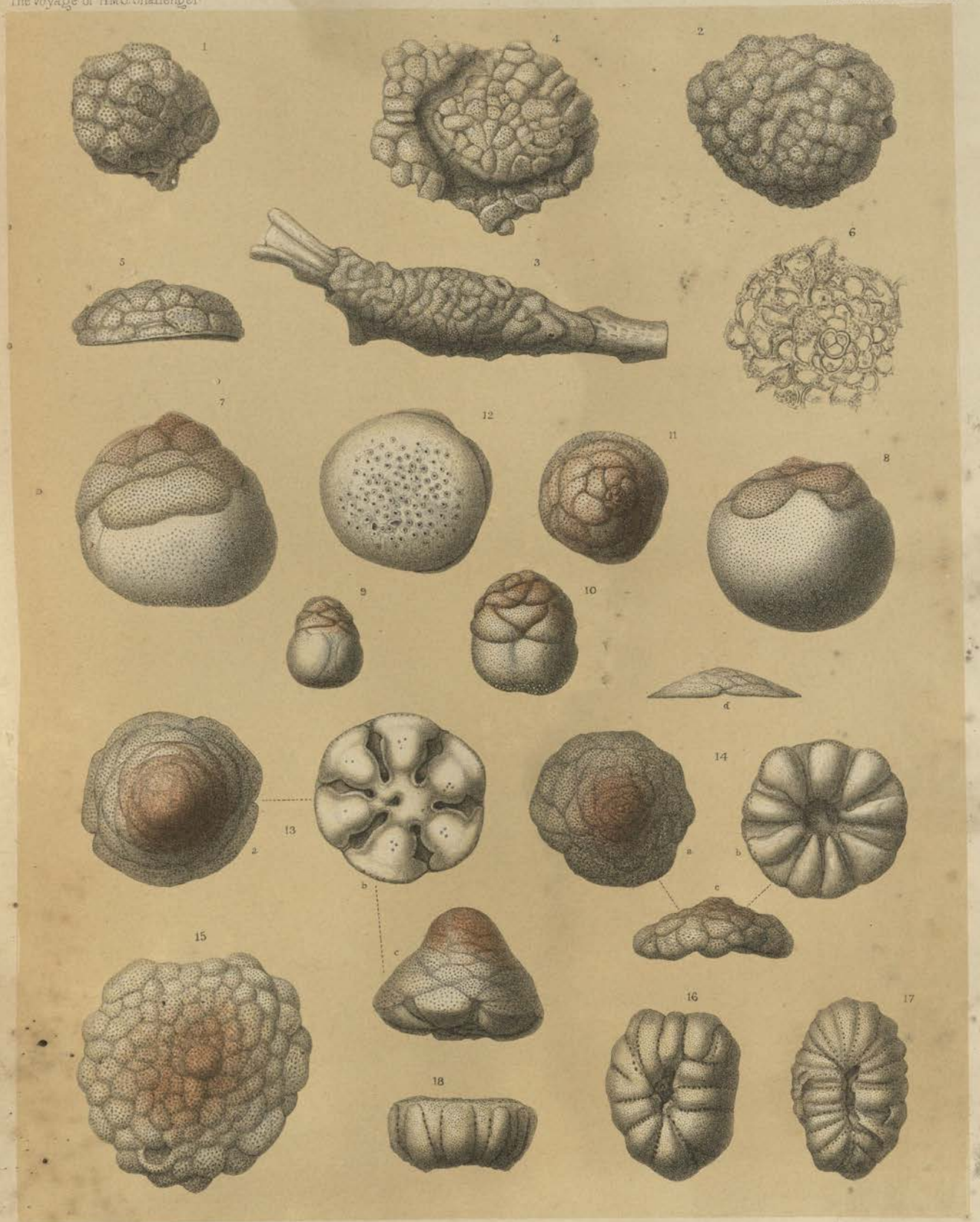
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.

„ 14.	*Cymbalopora poeyi*, var.,	×	50	637

a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect; *d*, peripheral aspect of a somewhat similar, more slightly built specimen.

„ 15–18.	*Cymbalopora tabellæformis*, n. sp.,	×	40	637

Fig. 15. Superior aspect; figs. 16, 17, inferior aspect; fig. 18, peripheral aspect.



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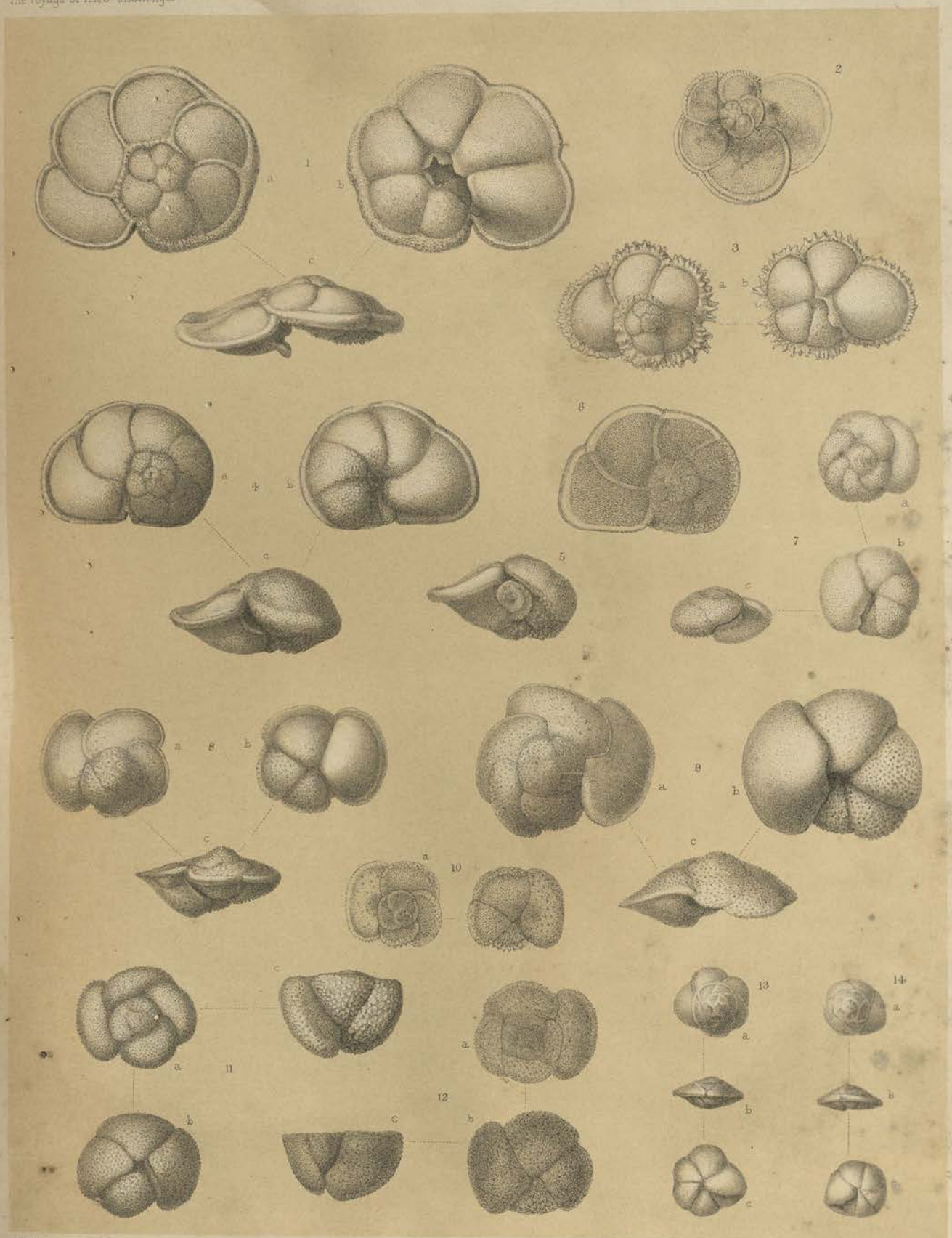
TINOPORUS (Gypsina) CYMBALOPORA.

PLATE CIII.

PLATE CIII.

PULVINULINA.

			Diam.	Page
Figures 1, 2.	—*Pulvinulina menardii*, d'Orbigny, sp., . .	×	35	690
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect. Fig. 1. Bottom specimen; fig. 2, surface specimen.			
„ 3.	—*Pulvinulina menardii*, var. *fimbriata*, nov., .	×	35	691
	a, Superior aspect; *b*, inferior aspect.			
„ 4–6.	—*Pulvinulina tumida*, Brady, ...	×	35	692
	Figs. 4 *a*, 6. Superior aspect; fig. 4 *b*, inferior aspect; fig. 4 *c*, 5, peripheral aspect. Figs. 4, 5. Bottom specimens; fig. 6, surface specimen.			
„ 7.	—*Pulvinulina patagonica*, d'Orbigny, sp., .	×	35	693
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
„ 8–10.	—*Pulvinulina canariensis*, d'Orbigny, sp., .	×	35	692
	a,a,a, Superior aspect; *b,b,b*, inferior aspect; *c,c*, peripheral aspect. Figs. 8, 9. Bottom specimens; fig. 10, surface specimen.			
„ 11, 12.	—*Pulvinulina crassa*, d'Orbigny, sp., . .	×	40	694
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect. Fig. 11. Bottom specimen; fig. 12, surface specimen.			
„ 13, 14.	—*Pulvinulina exigua*, n. sp., . . .	×	40	696
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect.			



A.T. Hollick ad nat. del. et lith.

PULVINULINA.

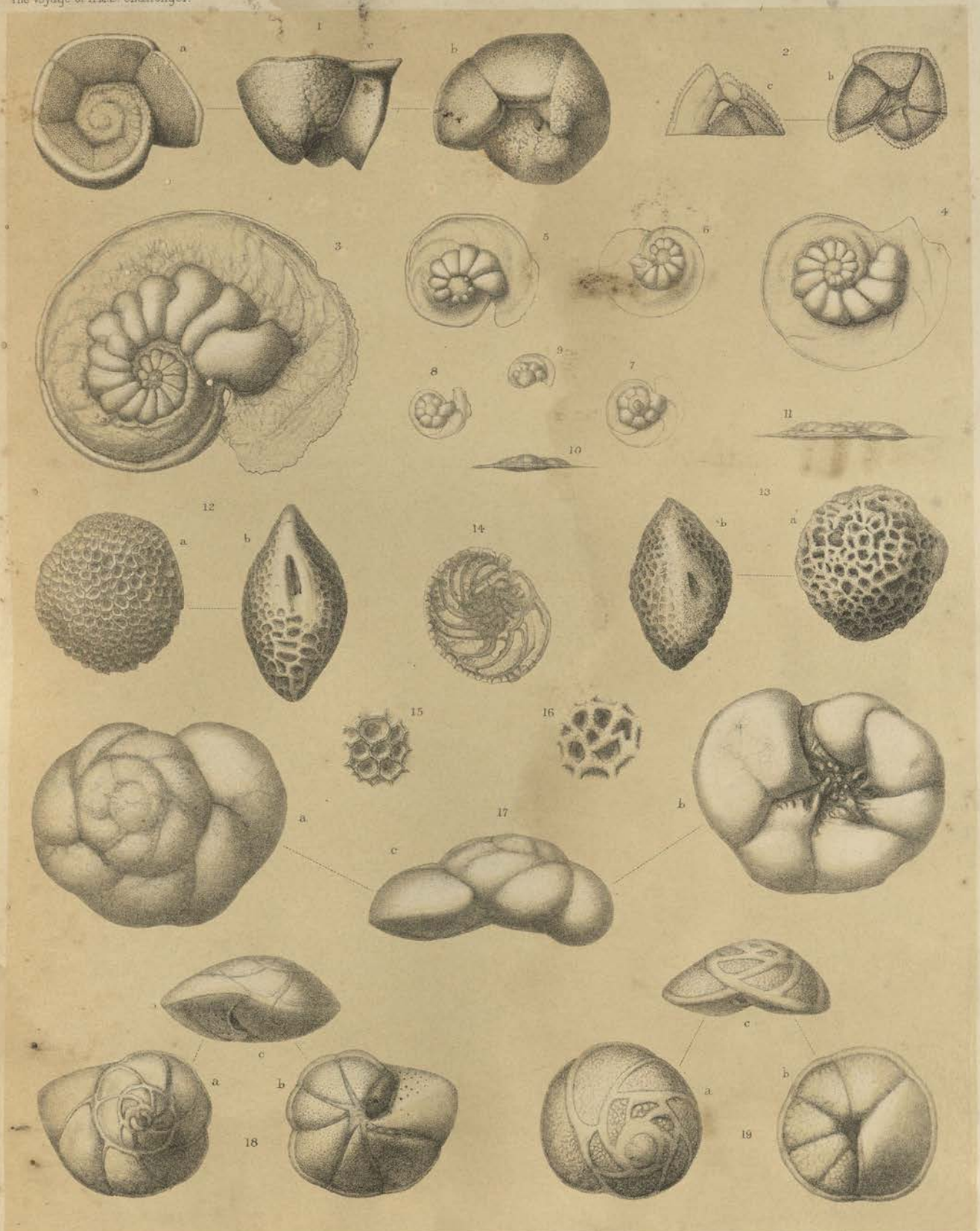
Hanhart imp.

PLATE CIV.

PLATE CIV.

PULVINULINA.

			Diam.	Page
Figures 1, 2.—*Pulvinulina micheliniana*, d'Orbigny, sp.,		×	40	694
a, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.				
Fig. 1. Bottom specimen; fig. 2, surface specimen.				
,, 3–11.—*Pulvinulina pauperata*, Parker and Jones,		×	25	696
Figs. 3–9. Lateral aspects of the shell, in various stages.				
Figs. 10–11. Peripheral aspect.				
,, 12–16.—*Pulvinulina favus*, Brady,				701
Figs. 12 *a*, 13 *a*, Lateral aspect; figs. 12 *b*, 13 *b*, peripheral aspect,		×	40	
Fig. 14. Horizontal section of the test,		×	40	
Figs. 15, 16. Portions of the surface more highly magnified,		×	80	
,, 17.—*Pulvinulina punctulata*, d'Orbigny, sp.,		×	16	685
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.				
,, 18.—*Pulvinulina repanda*, Fichtel and Moll, sp.,		×	30	684
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.				
,, 19.—*Pulvinulina repanda*, var. *concamerata*, Montagu, var.,		×	30	685
a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.				



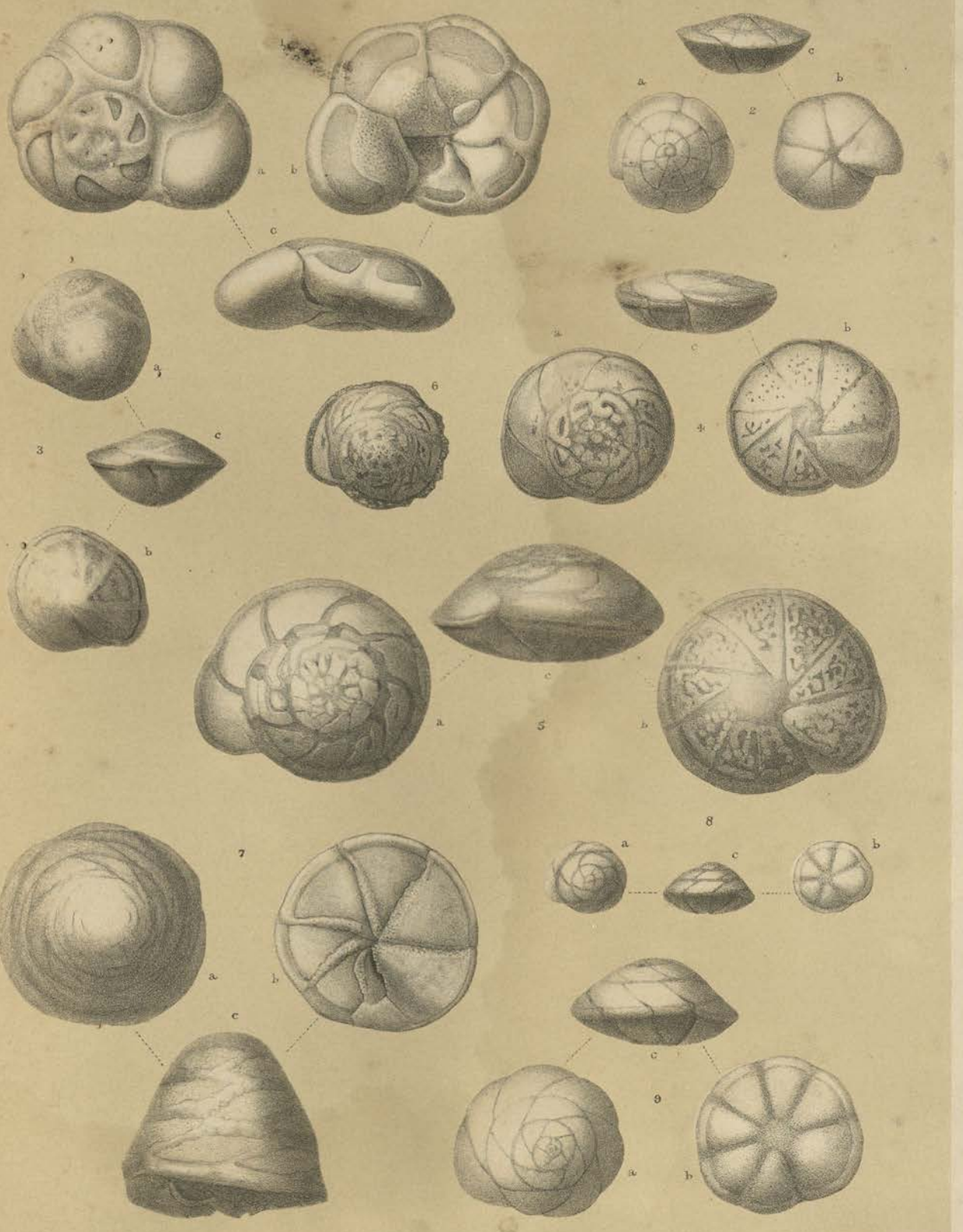
PULVINULINA.

PLATE CV.

PLATE CV.

PULVINULINA.

			Diam.	Page
Figure 1.	—*Pulvinulina concentrica*, Parker and Jones, .	×	35	686
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 2.	—*Pulvinulina umbonata*, Reuss, . . .	×	50	695
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 3–6.	—*Pulvinulina elegans*, d'Orbigny, sp., . . .			699
	Fig. 3. Deep-water form (*Pulvinulina partschiana*, d'Orbigny, sp.); *a*, superior aspect; *b*, inferior aspect; *c*, peripheral aspect, . . .	×	40	
	Figs. 4, 5. Typical specimens, from medium depths, .	×	35	
	Fig. 6. Carinate specimen, ...	×	35	
,, 7.	—*Pulvinulina procera*, Brady, . . .	×	35	698
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,, 8, 9.	—*Pulvinulina karsteni*, Reuss, sp., . . .	×	50	698
	Fig. 8. Specimen from Magellans Strait.			
	Fig. 9. Arctic specimen.			
	a,*a*, Superior aspect; *b*,*b*, inferior aspect; *c*,*c*, peripheral aspect.			



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Hanhart imp.

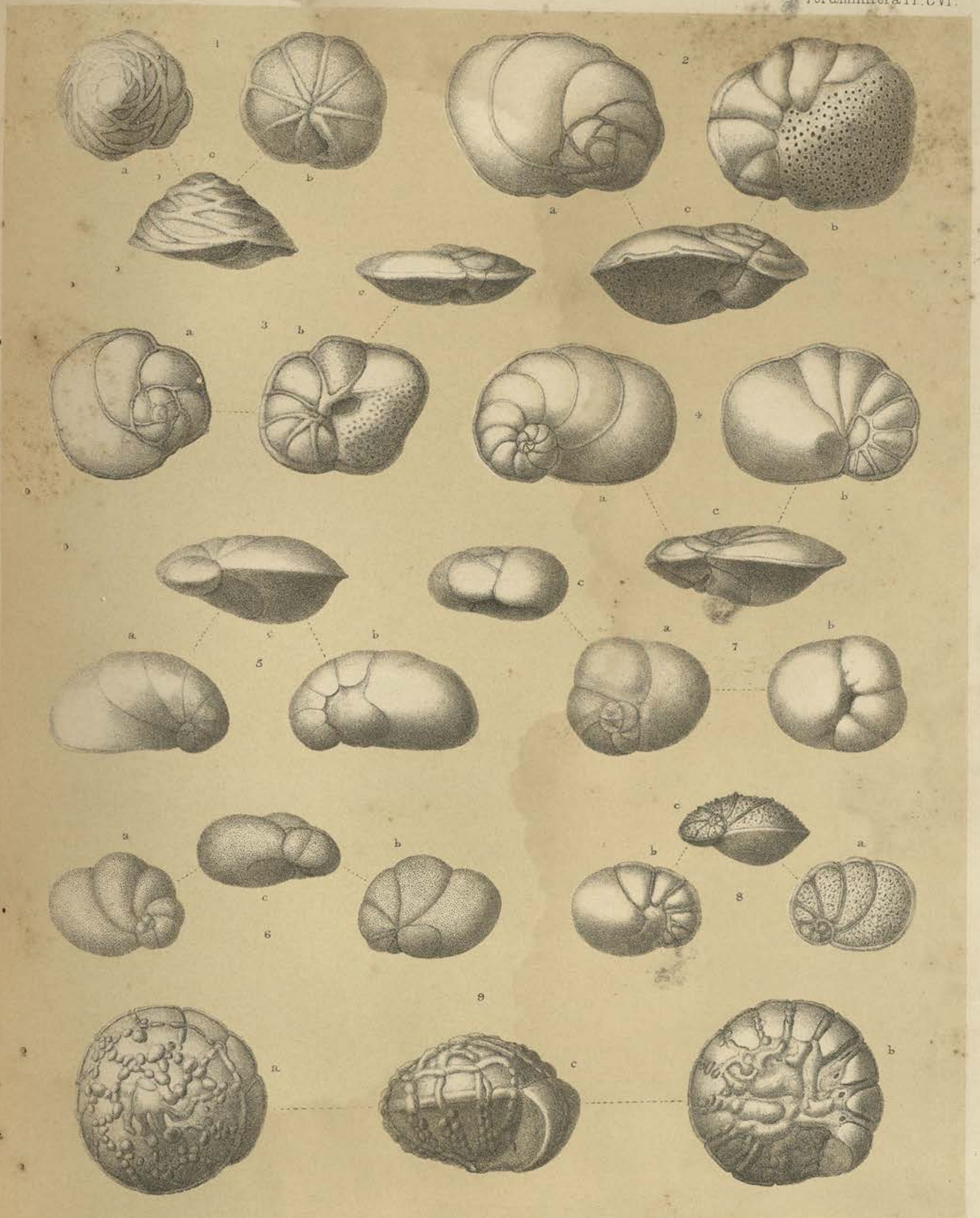
PULVINULINA.

PLATE CVI.

PLATE CVI.

Pulvinulina.—Rotalia.

			Diam.	Page
Figure	1.—*Pulvinulina berthelotiana*, d'Orbigny, sp., .	×	35	701
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	2, 3.—*Pulvinulina lateralis*, Terquem, sp., . .	×	35–40	689
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect.			
,,	4.—*Pulvinulina oblonga*, Williamson, sp., . .	×	40	688
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	5.—*Pulvinulina auricula*, Fichtel and Moll, sp., .	×	40	688
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	6, 7.—*Pulvinulina haueri*, d'Orbigny, sp., . .	×	40–50	690
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect.			
,,	8.—*Pulvinulina oblonga*, var. *scabra*, nov., . .	×	50	689
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	9.—*Rotalia papillosa*, n. sp., ...	×	30	708
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			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b
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2
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3
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b
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6
a
b
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7
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b
c
8
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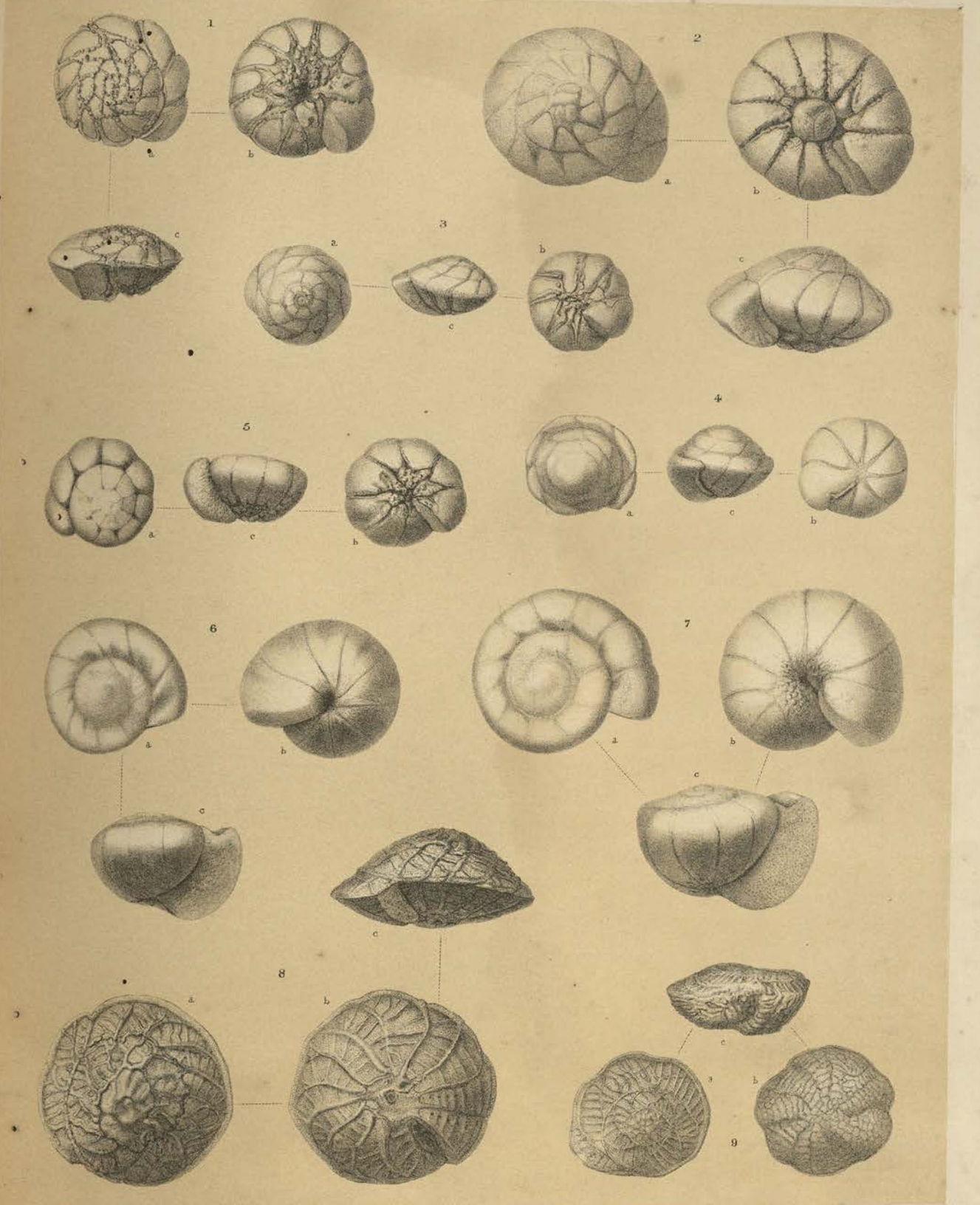
b
c
9
a
b
c

PLATE CVII.

PLATE CVII.

Rotalia.

			Diam.	Page
Figure	1.—*Rotalia papillosa*, var. *compressiuscula*, nov., .	×	30	708
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	2, 3.—*Rotalia beccarii*, Linné, sp., . . .	×	50	704
	a,a, Superior aspect. *b,b*, inferior aspect; *c,c*, peripheral aspect.			
,,	4.—*Rotalia broeckhiana*, Karrer, . . .	×	50	705
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	5.—*Rotalia orbicularis* (?), d'Orbigny, . .	×	50	706
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect. (A passage-form between *Rotalia beccarii* and *Rotalia orbicularis*. The typical *Rotalia orbicularis* is given at Pl. CXV. fig. 6.)			
,,	6, 7.—*Rotalia soldanii*, d'Orbigny, . . .	×	40	706
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect.			
,,	8, 9.—*Rotalia clathrata*, n. sp., ...	×	50	709
	a,a, Superior aspect; *b,b*, inferior aspect; *c,c*, peripheral aspect.			



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Hanhart imp.

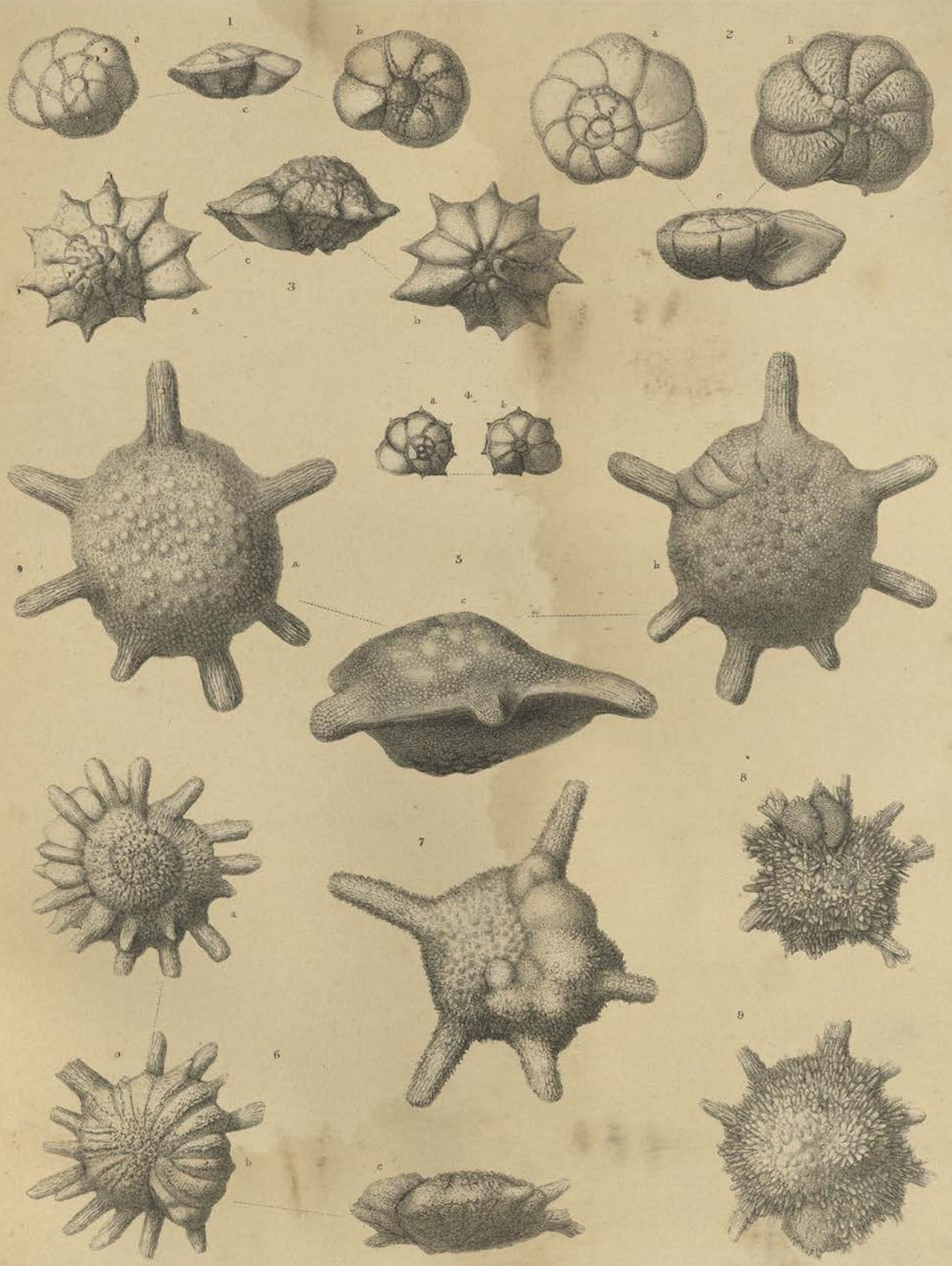
ROTALIA.

PLATE CVIII.

PLATE CVIII.

ROTALIA.—CALCARINA.

			Diam.	Page
Figure	1.—*Rotalia papillosa*, var. *compressiuscula*, nov. (young), ...	×	50	708
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	2.—*Rotalia venusta*, n. sp., ...	×	50	708
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	3.—*Rotalia calcar*, d'Orbigny, sp., . . .	×	50	709
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	4. Young specimen of the same, or possibly of *Rotalia dentata*, Parker and Jones, . . .	×	50	710
,,	5, 7.—*Calcarina spengleri*, Linné, sp., . . .	×	30–35	712
	Fig. 5 *a*. Superior aspect; figs. 5 *b*, 7, inferior aspect; fig. 5 *c*, peripheral aspect.			
,,	6.—*Calcarina defrancii*, d'Orbigny, . . .	×	30	714
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.			
,,	8, 9.—*Calcarina hispida*, Brady, . .	×	30	713



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Hanhart imp.

ROTALIA_CALCARINA.

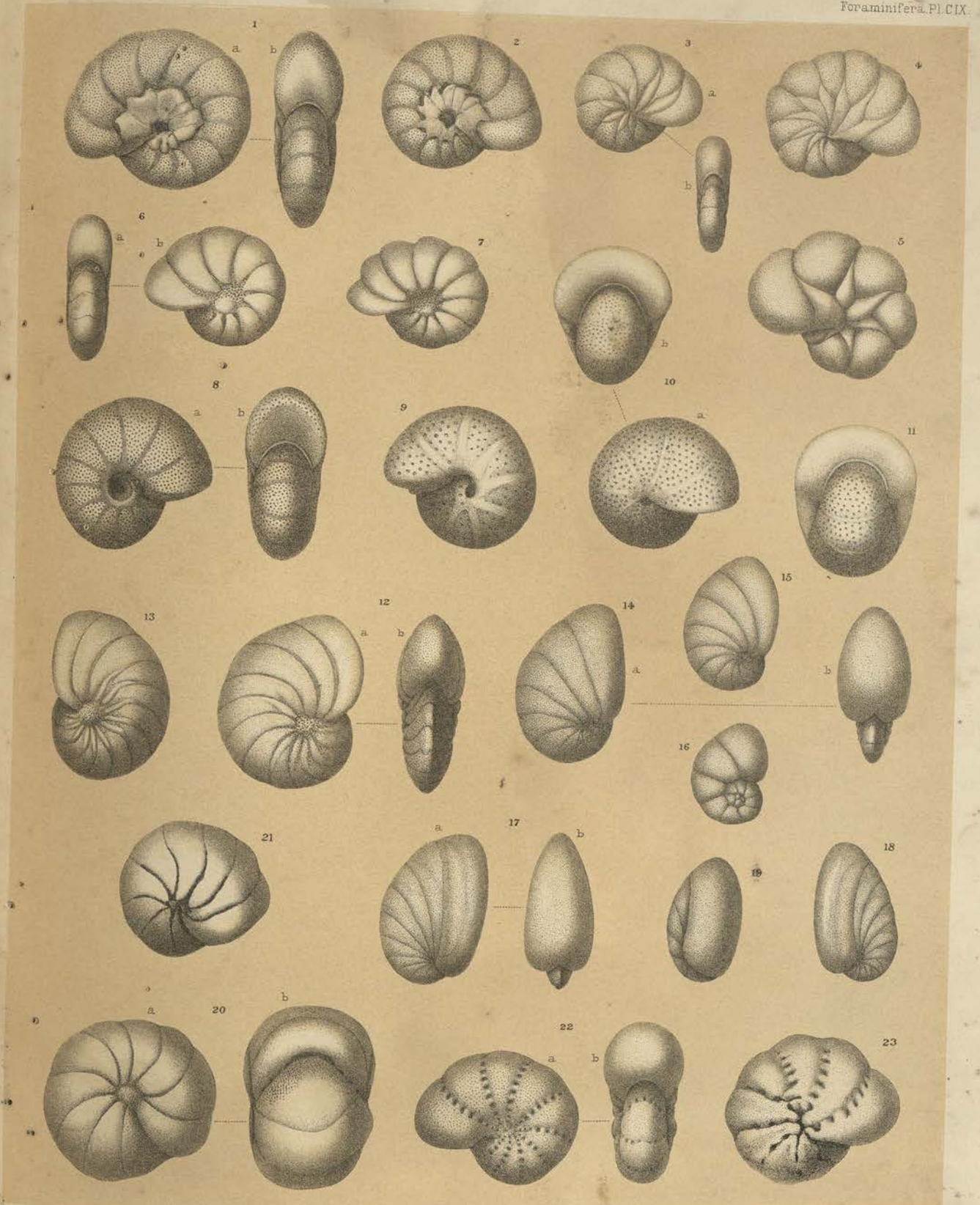
PLATE CIX.

PLATE CIX.

Nonionina.—Polystomella.

a, Lateral aspect; *b*, peripheral aspect.

			Diam.	Page
Figures	1, 2.—*Nonionina asterizans*, Fichtel and Moll, sp., .	×	50	728
,,	3–5.—*Nonionina stelligera*, d'Orbigny, ...			728
	Figs. 3, 4 × 75 diam.;—fig. 5, . .	×	60	
,,	6, 7.—*Nonionina depressula*, Walker and Jacob, sp.,	×	75	725
,,	8, 9.—*Nonionina umbilicatula*, Montagu, sp., .	×	70	726
,,	10, 11.—*Nonionina pompilioides*, Fichtel and Moll, sp.,	×	75	727
,,	12, 13.—*Nonionina boueana*, d'Orbigny, . .	×	70	729
,,	14–16.—*Nonionina scapha*, Fichtel and Moll, sp., .	×	75	730
,,	17–19.—*Nonionina turgida*, Williamson, sp., . .	×	75	731
,,	20, 21.—*Nonionina orbicularis*, Brady, . .	×	50	727
,,	22, 23.—*Polystomella striatopunctata*, Fichtel and Moll, sp., ...	×	75	733



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Hanhart imp.

NONIONINA — POLYSTOMELLA.

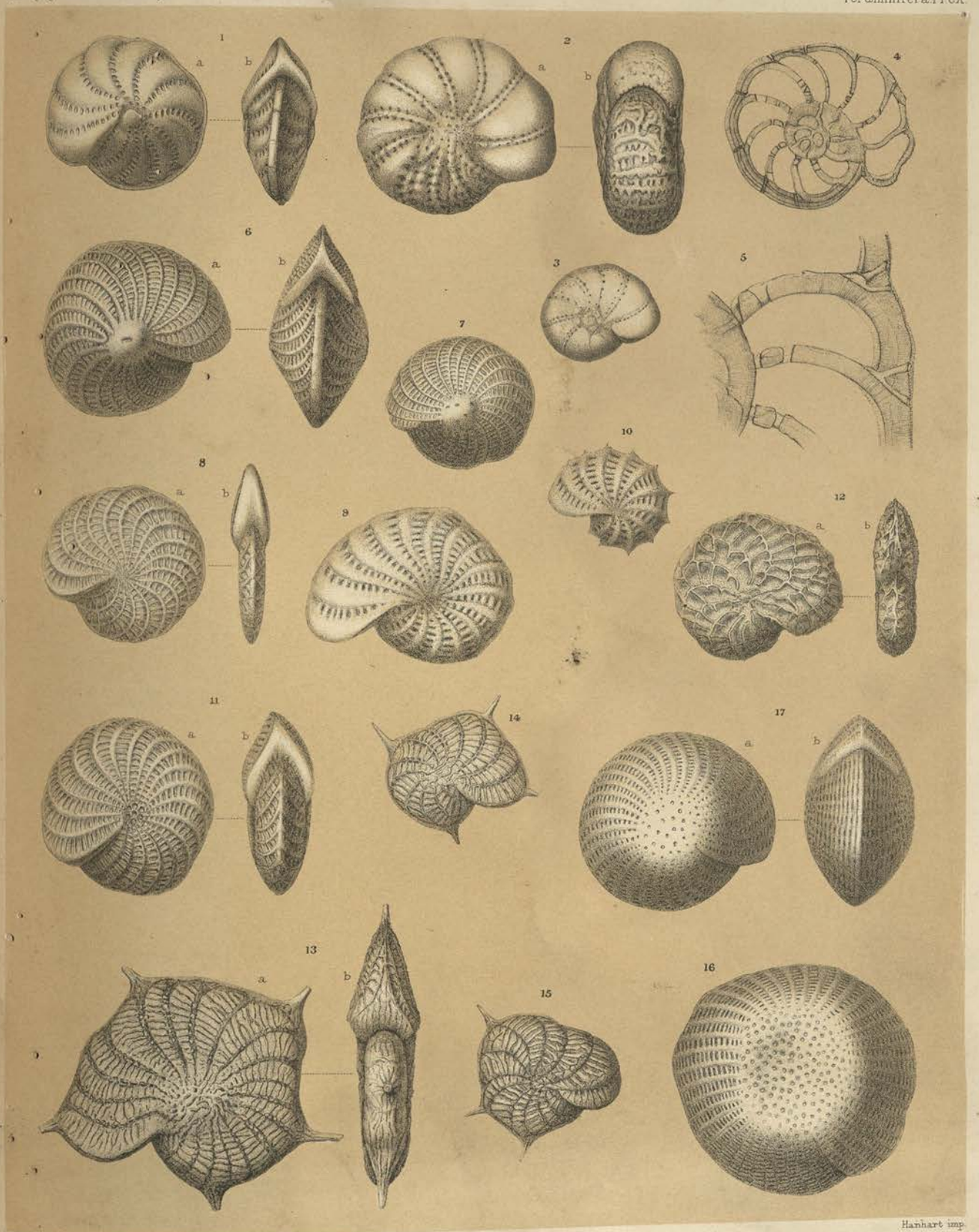
PLATE CX.

PLATE CX.

POLYSTOMELLA.

a, Lateral aspect; *b*, peripheral aspect.

			Diam	Page
Figure	1.—*Polystomella subnodosa*, Münster, sp., .	×	75	734
,,	2–5.—*Polystomella arctica*, Parker and Jones, ...			735
	Figs. 2*a*, 3, Lateral aspect; fig. 2*b*, peripheral aspect, ...	×	30	
	Fig. 4. Horizontal section, showing the segmentation, and the laminated thickening of the walls, . . .	×	30	
	Fig. 5. Portion of a section, more highly magnified, showing the septal apertures, and the forked interseptal canals the openings of which form the double rows of sutural orifices, .	×	100	
,,	6, 7.—*Polystomella crispa*, Linné, sp., . .	×	40	736
,,	8, 9, 11.—*Polystomella macella*, Fichtel and Moll, sp., ...	×	45–60	737
,,	10.—Young specimen, possibly of the same species, with the peripheral ends of the septa forming angular or pointed projections, . . .	×	60	737
,,	12.—*Polystomella verriculata*, Brady, .	×	65	738
,,	13–15.—*Polystomella imperatrix*, Brady, .	×	30	738
,,	16–17.—*Polystomella craticulata*, Fichtel and Moll, sp., ...	×	30–40	739



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Hanhart imp.

POLYSTOMELLA.

PLATE CXI.

PLATE CXI.

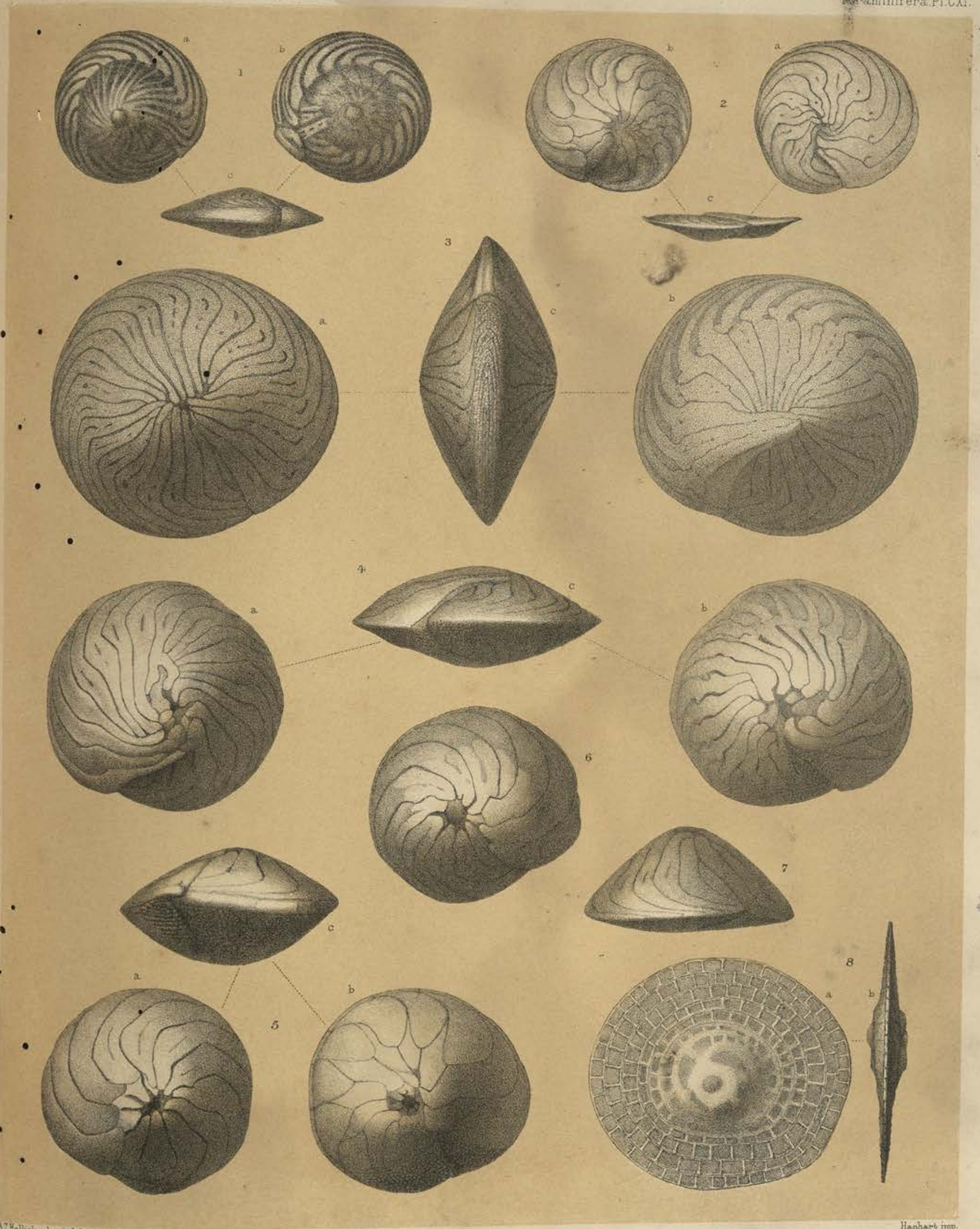
Amphistegina.—Cycloclypeus.

			Diam.	Page
Figures 1–7.—*Amphistegina lessonii*, d'Orbigny,	. .	×	30	740

a, Superior lateral aspect; *b*, inferior lateral aspect; *c*, peripheral aspect.
Figs. 1–4. Typical, compressed, lenticular form.
Figs. 5, 6. Thick variety, commonly inequilateral.
Fig. 7. Thick, very inequilateral or dome-shape variety.

,, 8.—*Cycloclypeus guembelianus*, Brady,	. .	×	35	751

a, Lateral aspect; *b*, peripheral aspect.



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Hanhart imp.

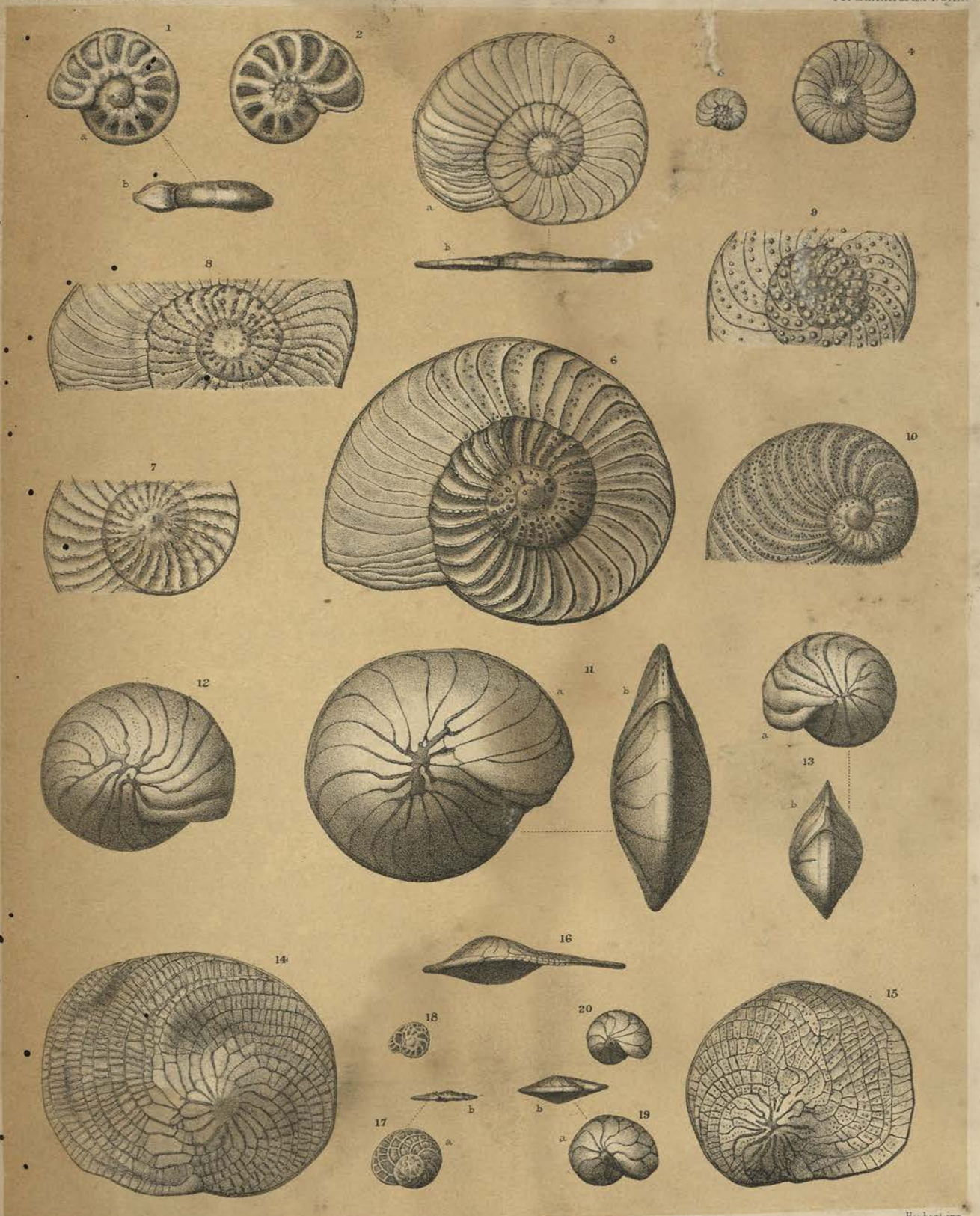
AMPHISTEGINA — CYCLOCLYPEUS.

LATE CXII.

PLATE CXII.

OPERCULINA.—NUMMULITES.—HETEROSTEGINA.

			Diam.	Page
Figures 1, 2.—*Operculina ammonoides*, Gronovius, sp.,		×	50	745
Figs. 1 *a*, 2. Lateral aspect; fig. 1 *b*, peripheral aspect.				
„ 3, 4, 5, 8.—*Operculina complanata*, Defrance, sp.,		×	12	743
Figs. 3 *a*, 4, 5, 8. Lateral aspect; fig. 3 *b*, peripheral aspect.				
„ 6, 7, 9, 10.—*Operculina complanata*, var. *granulosa*, Leymerie,		×	12	743
„ 11–13.—*Nummulites cumingii*, Carpenter,		×	18	749
Figs. 11 *a*, 12, 13 *a*. Lateral aspect; figs. 11 *b*, 13 *b*, peripheral aspect.				
„ 14–18.—*Heterostegina depressa*, d'Orbigny,				746
Figs. 14, 15. Adult specimens, lateral aspect,		×	12	
Fig. 16. Peripheral aspect,		×	15	
Figs. 17, 18. Young specimens,		×	25	
„ 19, 20.—*Heterostegina*, sp.,				746
Young specimens (*cf. Heterostegina curva*, Moebius),		×	25	



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Hanhart imp.

OPERCULINA_NUMMULINA_HETEROSTEGINA.

PLATE CXIII.

PLATE CXIII.

TEXTULARIA.—CASSIDULINA.—CORNUSPIRA, &c.

		Diam.	Page
Figure 1.—	*Textularia conica*, d'Orbigny, short variety,	× 50	365
	a, Lateral aspect; *b*, oral end.		
„ 2.—	*Textularia crispata*, n. sp.,	× 60	359
	a, Lateral aspect; *b*, peripheral aspect.		
„ 3–5.—	*Textularia transversaria*, n. sp.,	× 75	359
	Figs. 3 *a*, 4, 5. Lateral aspect; 3 *b*, oral end.		
„ 6.—	*Pulvinulina convoluta*, Williamson,	× 100	409
	a, Superior aspect; *b*, inferior aspect.		
„ 7.—	*Bolivina lobata*, var. *strigosa*, nov.,	× 80	425
	a, Lateral aspect; *b*, oral end.		
„ 8.—	*Cassidulina calabra*, Seguenza, sp.,	× 75	431
	a, *b*, Ventral and dorsal peripheral aspects; *c*, lateral aspect.		
„ 9.—	*Cassidulina* (*Orthoplecta*) *clavata*, n. sp.,	× 100	432
„ 10.—	*Ehrenbergina pupa*, d'Orbigny, sp.,	× 80	433
	a, *b*, Ventral and dorsal peripheral aspects; *c*, lateral aspect.		
„ 11.—	*Cristellaria latifrons*, n. sp.,	× 35	544
	a, Lateral aspect; *b*, front peripheral aspect.		
„ 12.—	*Cristellaria dentata*, Karrer,	× 35	540
	a, Lateral aspect; *b*, front peripheral aspect.		
„ 13.—	*Amphicoryne*, sp. (?)	× 50	556
14.—	*Sagrina limbata*, n. sp.,	× 100	586
„ 15.—	*Miliolina scrobiculata*, n. sp.,	× 50	173
	a, *b*, Lateral aspects; *c*, oral aspect.		
„ 16.—	*Miliolina pygmæa*, Reuss, sp.,	× 45	163
	a, Lateral aspect; *b*, oral aspect.		
„ 17.—	*Miliolina ferussacii*, d'Orbigny, sp.,	× 30	175
	Lateral aspects.		
„ 18, 19.—	*Cornuspira striolata*, Brady,		202
	Fig. 18. *a*, Lateral aspect; *b*, peripheral aspect,	× 5	
	Fig. 19. Portion of the surface, more highly magnified.	× 20	
„ 20.—	*Cornuspira crassisepta*, Brady,	× 60	202
„ 21.—	*Cornuspira lacunosa*, Brady,	× 60	202

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TEXTULARIA_CASSIDULINA, etc.

PLATE CXIV.

PLATE XIV.

MILIOLINA.—PLANISPIRINA.—LAGENA, &c.

		Diam.	Page
Figure 1.	*Miliolina terquemiana*, n. sp., a, Lateral aspect; b, oral aspect.	× 60	166
,, 2.	*Miliolina bertheliniana*, n. sp., a, Lateral aspect; b, oral aspect.	× 100	166
,, 3.	*Miliolina buculenta*, n. sp., a, Lateral aspect; b, oral aspect.	× 20	170
,, 4–7.	*Planispirina communis*, Seguenza, Figs. 4 a, 5, 6. Lateral aspect; b, peripheral aspect. Fig. 5. Abraded specimen, showing the Nummuline lamination of the shell. Fig. 7. Horizontal section of the shell.	× 20	196
,, 8.	*Lagena laevigata*, Reuss, sp., a, Lateral aspect; b, oral aspect.	× 70	473
,, 9.	*Lagena spiralis*, n. sp.,	× 120	468
,, 10.	*Lagena formosa*, var. *brevis*, nov., a, Lateral aspect; b, oral aspect.	× 100	480
,, 11.	*Lagena quadrangula*, n. sp., a, Lateral aspect; b, oral aspect.	× 100	483
,, 12.	*Nodosaria archiaciana*, d'Orbigny,	× 60	520
,, 13.	*Vaginulina legumen*, var. *arcuata*, nov.,	× 15	531
,, 14.	*Cristellaria wetherellii*, Rupert Jones, sp.,	× 18	537
,, 15, 16.	*Cristellaria compressa*, d'Orbigny, Figs. 15, 16 a, Lateral aspect; b, front peripheral aspect.	× 10	538
,, 17.	*Cristellaria acutauricularis*, Fichtel and Moll, sp., a, Lateral aspect; b, front peripheral aspect.	× 70	543
,, 18.	*Sagrina nodosa*, Parker and Jones, a, Lateral aspect; b, oral aspect.	× 70	583
,, 19, 20.	*Globigerina pachyderma*, Ehrenberg, sp., Fig. 19. a, Superior aspect; b, inferior aspect; c, pripheral aspect. Fig. 20. Horizontal section of the shell.	× 50	600
,, 21.	*Globigerina linnæana*, d'Orbigny, sp., a, Superior aspect; b, inferior aspect; c, peripheral aspect. Copied from d'Orbigny.		598

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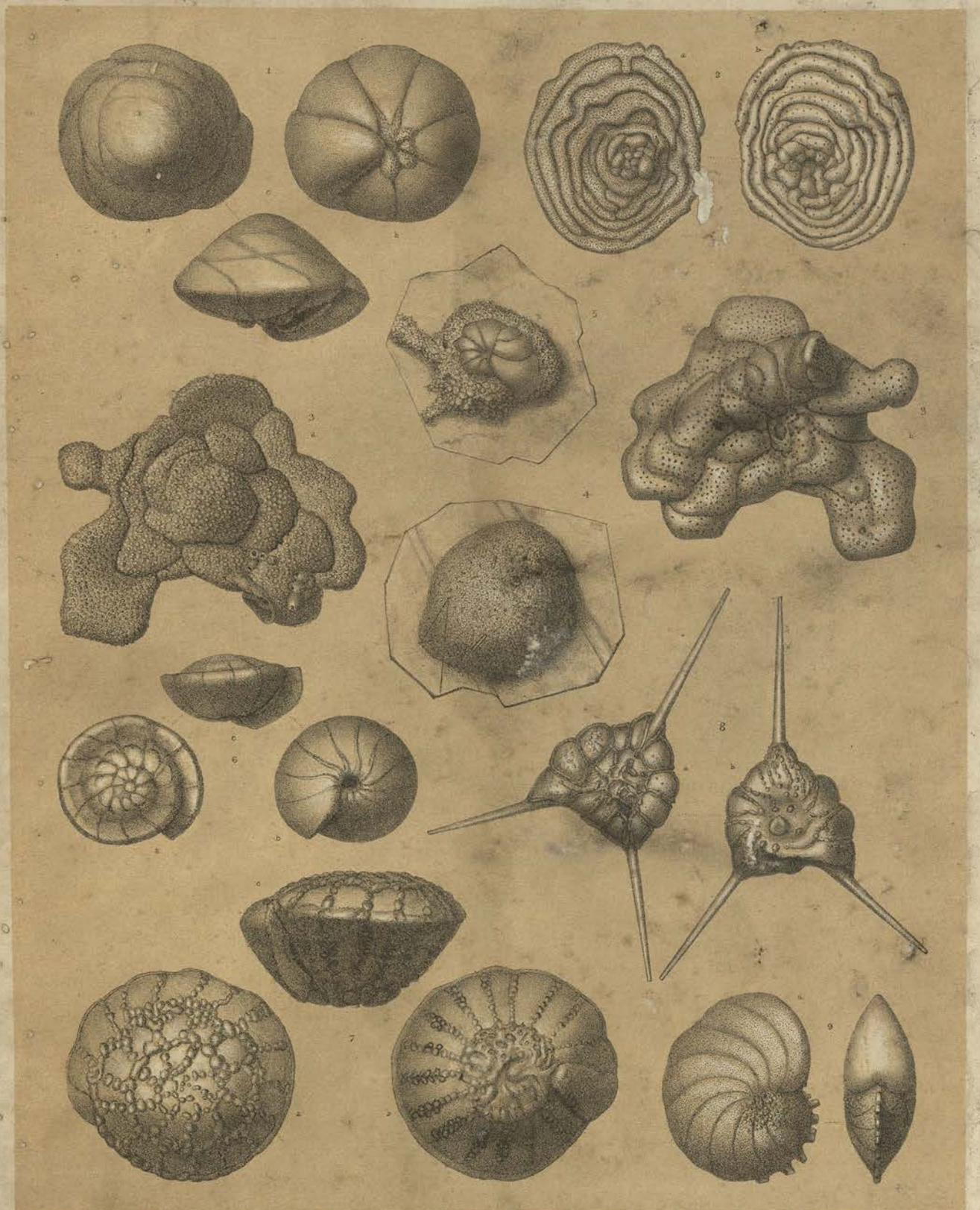
MILIOLINA_LAGENA, etc.

PLATE CXV

PLATE CXV.

PULVINULINA.—ROTALIA, &c.

		Diam.	Page
Fig. 1.	*Pulvinulina schreibersii*, d'Orbigny, n. sp., . .	× 30	697
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 2.	—*Pulvinulina vermiculata*, d'Orbigny, sp., . .	× 30	687
	a, Superior aspect; *b*, inferior aspect.		
,, 3.	—*Pulvinulina dispansa*, n. sp., . . .	× 14	687
	a, Superior aspect; *b*, inferior aspect.		
,, 4, 5.	—*Truncatulina lobatula*, Walker and Jacob, sp., .	× 30	660
	Fig. 4. Adherent specimen enclosed in a nidus of sand. Fig. 5. Similar specimen, the sand partially removed.		
,, 6.	—*Rotalia orbicularis*, d'Orbigny, . . .	× 50	706
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 7.	—*Rotalia schroeteriana*, Parker and Jones, . .	× 25	707
	a, Superior aspect; *b*, inferior aspect; *c*, peripheral aspect.		
,, 8.	—*Rotalia pulchella*, d'Orbigny, sp., . . .	× 50	710
	a, Superior aspect; *b*, inferior aspect.		
,, 9.	—*Nonionina boueana*, var. *armata*, nov., . .	× 60	730
	a, Lateral aspect; *b*, peripheral aspect.		



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